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LECTURE III.*

IN the preceding lecture the basic conceptions underlying Freud's theories were briefly considered, and the conclusion reached that their scientific validity could only be determined by an examination of the observed facts upon which they are based. An attempt must be made here to indicate the lines along which such an examination should be directed, but before passing on to this task it will be advisable to trace Freud's sex theories through a further stage in their development, as a better understanding of the part assigned to sex and libido in the modern Freudian system will thereby be attained. This further stage is characterised by the incorporation of the conception of "narcissism," and its history lies along two lines of research, the investigation of dementia præcox and of the psychoneuroses of the war.

THE CONCEPTION OF NARCISSISM.

The psycho-analytic investigation of dementia præcox had been to some extent foreshadowed by Freud, but the first systematic study along these lines was due to Jung, who in 1907 published his well-known "Psychologie der Dementia Præcox." He showed that many of the symptoms of dementia præcox closely resembled those met with in hysteria and were explicable by almost identical mechanisms, yet they differed from the latter in their fixity and immutability. This characteristic inaccessibility was further investigated in the light of Freud's libido theory, and was seen to be associated with an absolute incapacity for "transference," that is to say, the peculiar affective relationship between physician and patient upon which all therapy was conceived to depend. As a result of subsequent work conceptions were devised by which the inaccessibility of the dementia præcox patient was brought definitely into relation with the libido theory, and the theory itself considerably modified and extended. It was held that the earlier stages of sex development included a phase in which the libido was directed on to the individuals own "ego." This phase, in which the ego might be said to constitute the "object" of the libido, preceded the phases in which an object was sought in the outer world, and to its manifestations the name of "narcissism" was given. Dementia præcox could then be conceived as involving a regression to the narcissistic stage of sex development, just as the psychoneuroses were regarded as involving regressions to other and later stages of that development. In this way the familiar features of dementia præcox, its curious shut-in character, its divorce from reality, the inaccessibility of the patient, and his tendency to live in a phantasy of his own making, could be explained as direct results of the attachment of the libido to the ego, and its consequent imperviousness to the claims of the external world. And in this way also dementia præcox could be subsumed under that interplay of the libido and the ego which has come to be more and more the central point of the Freudian theories.

During the recent war a great mass of illness occurred which, christened at first by the misleading name of "shell shock," came ultimately to be known as the psychoneuroses of war. This change of nomenclature was due to the rapidly won recognition of the psychological origin of these conditions. Indeed, it may be said that, whatever else the war has done, it has at least conclusively demonstrated the existence and importance of psychogenic disorder. It was observed that the psychoneuroses of war, although naturally coloured in their symptomatology by the peculiar circumstances of their origin, did not differ in essentials from the psychoneuroses already familiar in civil life. Moreover, investigators noted that the mechanisms which Freud claimed to be responsible for psychoneurotic symptoms were remarkably applicable to the war conditions, and that they were in fact much more obvious and easily demonstrated in the latter, doubtless because of their relatively rapid development and simple character. There seemed to be no doubt that an intrapsychic conflict was at the bottom of the war psychoneuroses, and one which produced its effects according to laws identical with those already described by Freud. Yet the conflicting forces had apparently no relation to sex, but were manifestly concerned with instincts of a totally different character, in particular those ministering to self-preservation. The general effect of these observations was to confirm in a high degree Freud's conceptions of mechanisms, while they threw grave doubt upon his generalisation that psychoneuroses invariably involved the sex instincts and were the result of fixations and regressions in the action of the libido. The Freudian school, however, endeavoured to save the position by an application of their new conception of narcissism. The part apparently played in the war psychoneuroses by the instincts of self-preservation was reduced to a manifestation of narcissism, and thus the conflicts which overtly had no relation to sex were brought within the general theory of the libido and its development.

Freud has always insisted, even in his earliest work, that he was attaching to sex a wider significance than that with which it was generally credited. It is clear, however, that in the developments we have just considered, its application has been extended to a far more comprehensive sphere than was contemplated in the original theories. These developments are, indeed, a particular instance of an evolution which characterises the whole of the later growth of the psycho-analytical doctrines. The libido theory has been pushed into further and further fields, and the manifestations of the libido are now held to include not merely normal sex activity, perverted sex activity, and the psychoneuroses, but a vast mass of human thought and behaviour. Freud's early generalisation that no neuroses can be present with a normal sexual life has been submerged in an immensely wider generalisation which, though not explicitly stated, might be said to run, "Without processes having their origin in sexual life the greater part of human activity would cease to exist." As psycho-analytical investigation proceeds, more and more of the behaviour of man is brought under the general conception of the interplay of libido and ego, and it is perhaps not unreasonable to assume that the aim in view is to bring the whole of such behaviour under it. In other words, Freud's theories have moved far beyond the department of medicine in which they had their origin. The position now is that the permutations of the libido account for a great number of the phenomena of life, and certain permutations account for some of the phenomena of disease.

We may pause to examine this wide conception, and to consider whether it is inherently possible or justifiable. To begin with it may be noted that, although the attempt to subsume so much of human activity under a single principle naturally arouses immediate criticism, it is not in itself absurd, and is indeed supported by certain general considerations. Drever has remarked that "though perceptual experience is more and more overlaid by the higher

* Lectures I. and II. appeared in THE LANCET of March 20th and April 3rd respectively.

mental processes, it always underlies them, and, though control of primitive impulse becomes more and more complex, it is always a control by that which draws its controlling force, ultimately and fundamentally, from primitive impulses, never a control *ab extra*." [1] Pursuing this line of thought it may be said that, if we are to dissect mental processes into constituent parts, and to trace back the driving forces to their elements, the latter must presumably consist of something like the primitive instincts. Similarly, if we accept an evolutionary standpoint, we must build up man's activities from elements to be observed in lower animals, and sex and self-preservation would constitute the chief founts from which energy could ultimately be derived. It is not therefore impossible, or even improbable, that a conception will finally be achieved in which the manifold activities of man are reduced to primitive forces, and shown to be the result of permutations and combinations amongst those forces. These considerations serve to show that Freud's attempt is at any rate legitimately conceived, but whether it is a successful attempt is, of course, another matter. We may conclude that here, as in the case of the other conceptions we have examined, a priori objections have no weight, and that the whole structure of Freud's work can only be appraised by a careful examination of the facts upon which it is based, and a determination of the extent to which the concepts proposed can be confirmed and verified by those facts.

The application of criticism along such lines is made easier by the circumstance that these are precisely the criteria by which Freud himself is prepared to abide. He has pointed out that "psycho-analytical investigation could not, like a philosophical system, make its appearance with a complete and ready system of doctrine, but had to build up step by step the way to the understanding of psychical complications by the analytic dissection of normal and abnormal phenomena." [2] In other words, the claim is made that psycho-analytical theory is a direct induction from observed facts, and must stand or fall with the accuracy of the facts and the validity of the induction. Such a claim is a legitimate appeal to the bar of science, and justifiable criticism can only concern itself with two questions: (1) are the facts as stated? (2) are the concepts built up thereon valid?

The first question leads us to the kernel of the matter at issue, and discloses at once the strength and the weakness of the psycho-analytic position. The contention is put forward that anyone who will investigate a case by Freud's method will find that the facts observed are as Freud states them to be, and it might appear that if this contention could be established the foundations of psycho-analytical theory would be placed beyond dispute. Now there is undoubtedly considerable evidence in support of this statement, though not perhaps that overwhelming evidence which would serve completely to justify it. It may be accepted that the great majority of those who have examined cases by Freud's method have confirmed his observed facts, and this applies even to observers such as Jung, who have drawn from those facts conclusions very different from those of Freud. Yet this acceptance has by no means that complete confirmatory significance which it at first sight appears to carry. We note that the facts are observed by the aid of a particular method, and until we have carefully examined the nature of this method and its reliability as a weapon of investigation, the value of the facts ascertained by its use cannot be satisfactorily determined, even if it could be shown that all the users of this method have observed identical phenomena.

[1] Drever: Instinct in Man, second edition, 1921, p. 151.
[2] Freud: Das Ich und das Es, 1923, p. 42. ". . . dass die psychoanalytische Forschung nicht wie ein philosophisches System mit einem vollständigen und fertigen Lehrgebäude auftreten konnte, sondern sich den Weg zum Verständnis der seelischen Komplikationen schrittweise durch die analytische Zergliederung normaler wie abnormer Phänomene bahnen musste."

THE METHOD OF PSYCHO-ANALYSIS.

The method whereby the facts, upon which Freud relies for the building of his theories, are elicited, is the method of psycho-analysis. The patient talks freely about any subject which occurs to him, avoiding so far as possible any deliberate attempt to control or direct the flow of his associations. It is held that these associations are largely conditioned by forces of which the patient is unconscious, and the physician, from his knowledge of mental mechanisms, is enabled to deduce from the material provided by the patient, and the manner of its presentation, the nature and mode of action of the factors responsible for it. These conclusions are utilised by the physician to point out to the patient the significance of certain of his thoughts, to direct his attention to others, and so to push the investigation until the unconscious factors are fully brought into the light of consciousness. Freud has himself described the process in these words: "The patient talks, tells of his past experiences and present impressions, complains, and expresses his wishes and his emotions. The physician listens, attempts to direct the patient's thought processes, reminds him, forces his attention in certain directions, gives him explanations and observes the reactions of understanding or denial thus evoked." [3] Later, on the same page, he remarks that the patient "will make the communications necessary to the analysis only under the conditions of a special affective relationship to the physician," the so-called "transference."

OBJECTIONS TO THE RELIABILITY OF PSYCHO-ANALYSIS.

Now this is admittedly the method by which the facts of psycho-analysis are obtained, and an examination of its character seems to call for a considerable modification of the claim that psycho-analytical theory is based upon facts of observation. It is true that the theory is based on "facts," but these facts are not obtained by simple observation; they are reached by the employment of the method of psycho-analysis. This method intervenes, as it were, between the actual facts of observation and the prepared facts upon which the concepts are based, and it is of such a nature that the possibility of distortion cannot with certainty be excluded.

It has become a commonplace of psychology that the direction of thought, and its content, are influenced in a remarkable manner by factors of an affective order, and it is clear that such influences are at least possible in the method of psycho-analysis. Before we can be satisfied that the communications of the patient, which constitute the facts of observation of psycho-analysis, are of the kind to which the term "fact of observation" is customarily applied in other branches of science, we must be satisfied either that they are not distorted by the method of investigation employed, or that the degree and direction of the distortion can be accurately estimated. An attempt to apply this test to psycho-analytical research will be rendered easier by a preliminary review of the knowledge we possess concerning the potential sources of such distortion.

The problem of the value of human evidence—that is to say, the objective accuracy to be credited to communications made by one person to another concerning matters of fact—aroused considerable interest amongst psychologists in the earlier years of the present century. It had been previously noted by historians that the old standard whereby the moral character of a witness was taken as the sole test of his reliability, and his statements held to be accurate if his honesty was established, was inadequate and misleading. It was apparent that, quite apart from his honesty, his statements might be perverted by all kinds of factors of whose action he was completely unconscious. Binet, in 1900, called attention to "the advantage that would accrue from the

[3] Freud: Introductory Lectures on Psycho-analysis, English translation, 1922, p. 13.

creation of a practical science of testimony,"[4] and the suggestion was enthusiastically taken up by Stern,[5] of Breslau, who with his fellow-workers carried out an immense amount of painstaking research. Extensive experiments were devised, consisting essentially in the submitting of a predetermined experience to a number of subjects, and subsequently obtaining from them an account of what they had observed. The results were remarkable, and showed conclusively that a witness's report of his experience, even when given with the utmost honesty and conscientiousness, is rarely completely correct, and that a proportion of the details, including even those of whose truth the witness is absolutely certain, are erroneous. Thus in Borst's experiments only 75 per cent. of the items of which the witness was certain were in fact accurate.[6] If, instead of being asked simply to narrate what he had observed, the witness were interrogated with regard to details, accuracy was greatly diminished, though the range of facts apparently remembered was increased. This result is presumably to be attributed to the suggestive influence of the questions asked.

The mechanisms responsible for these perversions of memory were studied by observers who noted the influence of preconceptions, suggestion, and various other factors. Investigations of definitely pathological phenomena showed that extraordinary memory distortions may occur, such as the confabulations of the hysteric and the alcoholic, and the remarkable production of false reminiscences in the condition known as "pseudologia phantastica." Here the action of suggestion and other emotional forces was clearly demonstrable, and it was not difficult to show that the factors producing these exaggerated pathological effects were also active, though in a lesser degree, within the limits of the normal, and certainly capable of causing marked perversions. The conclusion to which all these various observations lead is that memory is an instrument whose reliability can be grossly disturbed by a multitude of factors, that no certain line between actual reminiscence and phantasy can be drawn except by some measure of objective verification, and that in the absence of such means a patient's statements concerning events of his past life can only be accepted with considerable reserve.

Freud is, of course, well acquainted with the facts we have enumerated, and with the potential capacity for distortion inherent in human memory. He was, indeed, one of the first to appreciate clearly the difficulty of distinguishing between phantasies and genuine reminiscences, and it was this recognition that led him to abandon his original theory that the psychoneuroses were the result of psychic traumata. He discovered that in many cases the traumatic event, which was apparently responsible for the subsequent disorder, had in fact never taken place, and was merely a phantasy constructed by the patient's mind. In such cases the clinical picture was nevertheless essentially identical with that observed where the "traumatic" event could be objectively verified, and the conclusion was therefore inevitable that the specific causal factors could not lie in the event, but in the mentality of the patient. Freud held that under these circumstances the objective validity of the memories produced by the patient was of relatively minor importance; he was concerned with the detection of intrapsychic forces, and for this purpose phantasies provided a material even more useful than genuine memories. Similarly, in the case of dreams, whether a patient actually dreamt a dream as he related it, or unwittingly elaborated it on waking into an appreciably different structure, mattered but little to the work of interpretation, because in both cases the same forces were at work, and it was the discovery of those forces which constituted the problem at issue. This contention is applicable to the material produced during a psycho-analysis, and goes some way towards meeting the objections we have cited concerning the validity of that material. It is, indeed, a sound contention so far as the distorting forces arising within the patient's own mind are concerned. These would influence the flow of thought, but would by this very circumstance provide the necessary ground for their detection, and we should have no reason to deny to the flow of thought the title of "fact of observation," although the patient might be relating phantasies rather than actual memories. It is quite another matter, however, when the flow of thought is not influenced by purely intrapsychic factors, but by the intervention of the psycho-analyst. Under these circumstances the "memories" produced may be conditioned to a very significant extent by factors which lie entirely outside the patient, and the question of their value as indicators of the trends existing in the patient's mind assumes an altogether different aspect.

Moreover, the problem at issue is not merely conceived with memory. The whole direction and content of the patient's psychic processes are alterable by factors of the same kind as those observed in the case of memory. A lengthy investigation of a patient's mind means that one is no longer examining at the end of the investigation the object which one set out to observe, but an object which has progressively altered during the course of the investigation, and altered in a way which may have been largely determined by the investigation itself. This was the circumstance which vitiated absolutely and completely the painstaking conclusions drawn by Charcot and his school from the phenomena observed in the trained hysterics of the Salpêtrière. A perusal of the literature of double personality suggests strongly the existence of a similar vitiating factor, and in a case of this kind which I was personally able to investigate I had no difficulty in satisfying myself that much of the symptomatology observed was a direct result of the process of investigation employed.[7] It is not easy to avoid the conclusion that the method of psycho-analysis contains potential sources of distortion at least as great as those in the instances just mentioned. The preconceptions of the analyst, the particular moments at which he sees fit to intervene in the patient's narrative, the emphasis which he directs to certain features of the narrative, the point at which he deems a flow of associations to have reached a significant element, all these are abundantly able to produce decided alterations in the subsequent functioning of the patient's mind. It must be remembered, moreover, that psycho-analysis is a lengthy process, and that very small changes of direction in a long course may lead ultimately to a wide divergence. When the majority of the changes of direction tend to be in the same sense, as they are likely to be in investigations conducted by analysts trained in a particular system of beliefs and technique, then it is not surprising that the final pictures attained bear a close similarity. It may be noted in this connexion that, while the pupils of Freud confirm by their clinical observations the findings of their master, the pupils of Jung, working with weapons forged of much the same material and in a closely similar pattern, have no difficulty in finding ample clinical confirmation for the quite disparate tenets of Jung.

These objections to the reliability of psycho-analysis as a means of investigation are of a grave character, and make it impossible to accept the contention that Freud's theories are based on facts of observation if the term "fact of observation" is given the significance which it possesses in other branches of science. Moreover, if the facts of observation are not beyond question, the conceptions and theories built upon them cannot be solidly constructed

[4] Binet: La Suggestibilité, 1900.

[5] The contributions of Stern and his school are mainly contained in the two volumes of the Beitr. z. Psychol. d. Aussage, Leipzig, 1903–1906. Cf. also the author's paper, The Psychology of Rumour, Proc. of the Roy. Soc. of Med., 1918.

[6] Borst: Récherches expérimentales sur l'éducabilité et la fidelité du témoignage, Arch. de Psychol., Genève, 1904.

[7] Bernard Hart: A Case of Double Personality, Jour. of Mental Science, 1912.

according to the canons of scientific method, and it is not possible to stamp them with the hall-mark of science unless and until the means by which they have been obtained has been shown to be trustworthy. The claim has been put forward that an inquirer can convince himself of the validity of the method of psycho-analysis by the process of having himself analysed, but clearly this claim can have no weight when the problem at issue is the determination of the reliability of the method itself. The attainment of an inner conviction is a phenomenon belonging to the sphere of religion, and without relevance to science; its existence may attest the spiritual or æsthetic value of its object, but not its right to be incorporated into scientific knowledge. The latter right can only be gained by rigid objective verification and demonstration, and not in the least by subjective convictions.[8]

The claim that a person desiring to practise psycho-analysis must himself first be analysed in order to acquire the necessary technique is, of course, on an altogether different footing, and seems to be perfectly legitimate. It is perhaps also legitimate to require that the intending practitioner should undergo personal analysis to the end that he shall overcome his own "resistances," which would otherwise distort his judgment of the patient's mental processes. Clearly, however, this requirement can only be defended as a means of improving technique in a method already established, and it can contribute nothing to the demonstration of the validity of psycho-analytic method itself. On the contrary, the existence of such a claim inevitably strengthens the criticism which asserts that the trained preconceptions of the analyst play a part in fashioning the material produced by the patient. This criticism receives a further justification when we note that the followers of Jung, whose theories differ fundamentally from those of Freud, make a similar claim that the practitioner of their method must undergo a personal analysis, of course by a member of Jung's school, before he attempts to deal with the problems of his patient.[9]

In spite of the importance and weight of these various objections there are two points to be brought forward which serve to weaken their force. The first point is that psycho-analysis has a long history behind it, and many of its earlier discoveries were made by a process much less open to criticism than the method we have described in words quoted from one of Freud's later works. In these instances the intervention of the analyst was reduced to a minimum, and the "facts of observation" approximated much more nearly to the standard which science demands. A number of the more elementary Freudian conceptions and theories are solidly built upon facts of this character; they have attained a wide acceptance, and it is not unreasonable to regard them as established contributions to our knowledge. Moreover, it is necessary to emphasise that these comparatively elementary conceptions are nevertheless of the first importance, and have cast more light on the problem of nervous disorder than the work of any other psycho-pathologist, whatever the verdict history may ultimately pass upon the later theories and practice of Freud. In view of these circumstances psycho-analysts might naturally claim that the elementary and earlier conceptions are the groundwork upon which their later methods are constructed, and that if the former are valid, so also are these later methods. It is, nevertheless, difficult to accept this contention, because, although the margin of potential error in the elementary conceptions is relatively small, it becomes greater and greater the more an imperfect method is employed, unless it is possible to obtain objective verification by a frequent resort to the plane of phenomenal fact. This constant testing by an appeal to objective facts is a sine qua non in the development of any scientific theory, and we have seen that it is just this test which is lacking in the growth of psycho-analytical theory, because objective facts will not serve its purpose, but only those facts after they have been prepared by the method of psycho-analysis.

These considerations lead us on to the second point which serves to weaken the objections cited to the method of psycho-analysis. It is true that the facts are not of the order to which the facts of observation of other sciences belong, but this character appertains in some degree to all the facts of psychology. Except for the facts of introspection all other psychological facts are inferences. The only direct observation possible is observation of behaviour, of action, or of speech; in order to deal with these facts by the psychological method it is necessary to go behind them to the underlying subjective experience, which cannot be directly observed, but only inferred from the behaviour facts. In this way a new series of "facts" is obtained upon which the psychological concepts are ultimately constructed. This peculiarity of the method of psychology has been emphasised by Drever, who regards it as an inherent weakness, and one which dooms psychology to occupy always an invidious position in the scientific hierarchy, so that explanation of a particular series of phenomena by the concepts of another branch of science will always be accepted in preference to a psychological explanation, if both are available.[10]

Moreover, although the facts of introspection are observed with a directness and intimacy greater than that attaching to the facts of any other science, yet they are by their intrinsic character incapable of objective verification, and we already know that they are subject to numberless sources of error unless they are made in a sphere in which emotional and other distorting factors are unlikely to play a part. It is objective verification which science insistently demands, and owing to the nature of its material psychology can only give an inadequate response to that demand. The objection on this score which has been taken to the method of psycho-analysis is therefore applicable to the whole sphere of psychological research. Nevertheless, there are degrees of deviation from the strict canon of scientific method. It may be true that every psychological conception rests upon facts which are separated from actual facts of observation by some measure of inference, but in many such conceptions that measure of inference is very small. In Janet's conception of dissociation, for example, the degree of inference is so slight that it may safely be neglected, and a similar statement is perhaps applicable to the more elementary Freudian conceptions, but in the elaborate later theories the actual facts of observation become more and more remote, and the degree of inference swells by progressive accretions until a satisfactory objective verification is no longer possible.

We are, therefore, compelled to regard the method of psycho-analysis as an imperfect weapon of investigation, and one capable of seriously distorting the facts which it elicits. Those facts, and a fortiori the conceptions built upon those facts, must hence be accepted only with reserve unless other sources of confirmation are available lying altogether outside the evidence furnished by the employment of the method itself. A number of such external sources

[8] Freud has himself considered the criticism that the admitted influence of the physician upon the patient casts doubt on the objective validity of the findings of psycho-analysis, in his Introductory Lectures on Psycho-analysis, English translation, 1922, p. 378. He holds that this criticism is more satisfactorily refuted by the evidence of experience than by the aid of theory, and that "Anyone who has himself conducted psycho-analyses has been able to convince himself numberless times that it is impossible to suggest things to a patient in this way." This would seem, however, to be a further resort to the "inner convictions" produced in the analyst as a ground for accepting the validity of his beliefs. It is, of course, possible to contend that in the sphere of psycho-analysis strictly objective verification is impracticable, and that a subjective verification is all that can be obtained, but such a contention would imply a decisive abandonment of the claim that psycho-analytic investigation satisfies the standards demanded by science. Freud's further arguments, relating to the verification afforded by therapeutics and the study of the insane, will be considered later.

[9] H. G. Baynes, in his preface to Jung's Psychological Types English translation, 1923, p. 19.

[10] Drever: Instinct in Man, second edition, 1921, p. 4.

of confirmation have been put forward, and these now call for some consideration.

THERAPEUTIC RESULTS OF PSYCHO-ANALYSIS.

The first confirmation proposed is that derived from the therapeutic results. Many of those who practise psycho-analysis formerly employed other methods such as suggestion and persuasion, and they maintain that the cures now achieved are much more extensive and permanent. The conclusion is drawn that, if a case treated by psycho-analysis recovers, this circumstance affords proof of the accuracy and adequacy of the method used. Unfortunately, this argument has but little weight. In the history of medicine many structures have been built upon the fallacy of post hoc ergo propter hoc, and an appreciation of its significance and potency would no doubt shake other departments of medicine than that with which we are here concerned. In this department, however, its incidence and effects are peculiarly disconcerting and difficult to appraise. It is, of course, true that satisfactory results are achieved by psycho-analysis, but it is equally true that satisfactory results are achieved by many, indeed by all, other methods of psychotherapy, and by a multitude of methods which lie altogether outside the walls of orthodox medicine. Moreover, if it be conceded that the cure is a direct result of the treatment, there remains considerable doubt as to the precise factors to which this result is to be ascribed, and it is possible that these do not belong to the essential structure of the method employed, but are merely vicariously associated therewith. For example, it is extremely difficult to delimit the results produced by faith and suggestion, and unless the activity of factors of these kinds can be accurately estimated, no certain conclusions can be drawn as to the efficacy of therapeutic methods into which such factors may enter.[11]

The Freudian school does not deny that a factor of the order of suggestion enters into psycho-analysis; on the contrary, its existence is an essential part of their tenets. This factor is the peculiar affective relationship which develops between the patient and the physician, and upon it the "transference" processes, which are conceived to be a necessary part of the therapeutic action, are dependent. Freud expresses this affective relationship in terms of his libido theory, and believes it to derive its driving power from the psychosexual forces existing in the patient. He regards all forms of psychotherapy as involving this relationship, including those grouped under suggestion. He holds, indeed, that "A human being is . . . on the whole only accessible to influence, even on the intellectual side, in so far as he is capable of investing objects with libido,"[12] and that this capacity distinguishes the psychoneuroses which can be treated from those conditions, such as dementia præcox, in which therapy is impotent because libidinous occupation with an object, and hence the necessary affective relationship to the physician, cannot develop.

It is admitted, therefore, that an affective relationship, essentially identical with that underlying suggestive therapy, necessarily occurs in the course of psycho-analysis, and is indeed an integral constituent of the curative process. The psycho-analytical school maintains, however, that this affective relationship is not allowed to dominate the whole course of the treatment, as it is in the case of suggestive therapy, but that at a certain stage it is itself submitted to analytic dissection and finally dissolved. If this contention be correct it is clear that the accurate estimation of the results to be ascribed to suggestion, which we postulated as a necessary pre-requisite before conclusions as to the therapeutic efficacy of psycho-analysis could be drawn, would immediately become possible. This contention is based, however, upon facts observed by the employment of the method of psycho-analysis, and its validity is entirely dependent upon the validity of this method. It can play no part, therefore, in a discussion in which the validity of the psycho-analytic method is itself the problem at issue, unless we are to be guilty of argument in a circle.

We must hence conclude that the argument from therapeutic results cannot provide the independent confirmation of psycho-analytic validity of which we are in search. It may be remarked here, however, that the opposing argument, which seeks to disprove psycho-analytic doctrine by the enumeration of alleged failures or harmful results, has still less weight. Quite apart from the inadequate and obviously biased character of much of the evidence put forward, it is clear that here again the fallacy of post hoc ergo propter hoc is once more playing a potent part. To ascribe an unfortunate sequel to the method of treatment employed rather than to the disease itself assumes an exact knowledge of the nature and interaction of the complex factors involved which we are very far from possessing, and such a conclusion cannot be justified until that knowledge is attained. Moreover, even if it could be demonstrated that the sequel was the direct result of the method, this would but bear witness to the potency of the method, and it has frequently been pointed out that a remedy which is incapable of doing harm is hardly likely to be capable of doing good.

THE BEARING OF MYTHS AND FOLK-LORE ON PSYCHO-ANALYSIS.

The second sphere in which it is alleged that confirmation of the findings of psycho-analysis can be obtained is the study of myths and folk-lore. It is maintained that there are to be found here human creations clearly exemplifying the processes which have been elicited in the individual by the method of psycho-analysis. A prodigious amount of research has been carried out in these fields by Freud's adherents, and the conclusions reached have been generally in accord with the principles of psycho-analysis. It is difficult to estimate the precise validity of these conclusions, because the actual objective facts observed in the research are admixed with a multitude of inferred facts of the kind peculiar to the psycho-analytic method, and anthropologists of other schools are by no means in agreement as to the deductions which may properly be drawn. We may admit, however, that the objective facts in this sphere do provide formidable arguments in favour of at any rate some of the findings of psycho-analysis.

INSANITY AND PSYCHO-ANALYSIS.

The third sphere in which confirmation of psycho-analytic doctrine is to be found is that of insanity. The evidence here is, perhaps, more convincing than in any other field, because phenomena can be observed in the speech and actions of the insane which are entirely conformable to the principles deduced by the psycho-analytic method, and in which any influencing of the patient by the physician is excluded by the nature of the case. MacCurdy has emphasised the strength of this evidence in a passage which at the same time acknowledges the inherent weakness of the psycho-analytic method, and this passage deserves quotation. "Everyone knows that preconceptions determine observations very largely in all scientific work. We see what we are on the look out for, and are blind to the unexpected. In psycho-analysis, however, this danger is augmented by the plasticity of the material which is largely produced in accordance with the theory of the analyst. With this condition of affairs it seems extraordinary that Freud should, during the years when he was making his discoveries, have kept his eyes so vigilantly open for new factors and new unconscious phenomena, and that his general conclusions as to the content of the unconscious should be so accurately confirmed by examination

[11] T. A. Ross, in his book The Common Neuroses, 1923, p. 7 ff, describes the various methods of treatment he has successively employed during his career as a psychotherapist, and points out that with each he obtained good results so long as, and only so long as, he himself believed in its accuracy and value.

[12] Freud: Introductory Lectures on Psycho-analysis, English translation, 1922, p. 373.

of the insane who do not talk or dream to order." [13]

GENERAL CRITICISM OF THE FREUDIAN THEORIES.

We may now endeavour to summarise our review of the Freudian theories. The criticism which has been levelled at the conception of the unconscious and other of Freud's basic assumptions on the ground that these are impossible entities is due to a misapprehension of the nature of science and of the psychological method of approach. The validity of these conceptions, as in the case of all scientific conceptions, can only be determined by an appraisement or recapitulation of the objective facts and the testing of the theories in the light of these facts. The real weakness of the Freudian theories depends upon the imperfections of the method of psycho-analysis as a weapon of investigation, whereby the conceptions rest on inferred facts rather than on actual objective facts. This weakness is inherent in some degree in all psychological research, but it is graver here, because the deviation from observed facts to inferred facts is exceptionally great, and introduces numerous potentialities of distortion. Moreover, these potentialities are much increased by the circumstance that the method of psycho-analysis may, owing to its peculiar nature, continuously alter the objective facts during the course of the analysis. Nevertheless, many of the simpler conceptions are based on inductions in which both the measure of inference and the possibility of distortion by the method of investigation are both comparatively small. Further, there are sources of confirmation outside the method of psycho-analysis which, at any rate, give some support to the conceptions. We may draw the final conclusion that, although the theories of Freud do not attain the standard demanded by the canons of science, some of his conceptions approximate very nearly to that standard, and perhaps as nearly as any psychological conception can approach. A consideration of the immense advantage to be gained from the introduction of a conceptual psychology as opposed to a mere description of mental processes, together with a due appreciation of the almost insuperable difficulty of obtaining satisfactory objective verification in this sphere, suggest that some deviation from the strict path of scientific induction must necessarily be allowed, if we are not to abandon all hope of progress. The danger of such deviation must always be borne in mind, however, and it must not be forgotten that subjective feelings of certainty in the followers of Freud are no substitute for the objective verifications which science must insistently demand. The solidity of the foundations is vastly more important than meticulous additions to the upper stories, and we may reasonably ask for every possible means of investigation to be directed to the method of psycho-analysis in itself, with a view to establishing its validity, and eliminating or controlling the sources of error which seem to be inherent in it.

The later publications of Freud culminating in "Das Ich und das Es," published in 1923, have not been considered. The keynotes of this later work may, perhaps, be said to be an alteration in the direction of inquiry from the libido to the ego, an attempt to analyse and define the properties of the latter, and various speculations concerning the fundamental forces of the mind. None of this work could be made intelligible without entering into a degree of detail quite impossible here. For our present purpose it will suffice to note that the investigations do not essentially alter the earlier findings, but superimpose additional stories upon the older building, so that their validity is necessarily dependent upon that of the underlying structure. A further ground for criticism, however, may be mentioned. The later work of the Freudian school with its minute dissection of the libido and the ego into constituent parts, which combine and interact in various ways, introduces a mass of conceptual entities which approximate in their form to those of chemistry and physics.[14] Now, it cannot be questioned that conceptual entities of this type can be legitimately employed if a stringent relationship to observed fact is rigidly maintained, but when they are reached by the extensive use of a spatial and mechanical metaphor, which can only be applied in the sphere of psychology by the exercise of some ingenuity and force, it is necessary to bear in mind the dangers which beset the road. The construction of such conceptions may, no doubt, indicate that psychology and psychopathology are attaining the precision and exactness of the mechanistic sciences, but it must be admitted that the philosophy of Pythagoras produced concepts which also appear to be precise and exact, and we need to be very sure in which of these fundamentally different directions we are travelling. The essential criterion lies in the relationship to the plane of observed facts. The concepts of mechanistic science are verifiable by a constant dipping to the level of experience and experiment; the speculations of Pythagoras can be submitted to no such test. The psycho-analytic school, of course, claim that this criterion is applicable to their work, and that the conceptions they put forward are legitimately built upon clinical observation. We are, therefore, led back again to the problem of the validity of the method by which these observations are made, and to the cardinal necessity of establishing that method, before we can feel any security in the many-storied structures which are now being built by their aid.

THE SCHOOLS OF ADLER AND JUNG.

The genius of Freud has produced a profound effect upon the development of psychopathology. In addition to the orthodox school of psycho-analysis, which follows more or less rigidly the path sanctioned by its founder, a multitude of other investigators have been materially influenced by Freud's conceptions. Many of these investigators are prepared to travel a certain distance with Freud, although they refuse to accept his views in their totality. Others incorporate individual psycho-analytic conceptions in theories mainly built on other lines, as we have seen to be the case with certain persuasionist and suggestionist practitioners of the present day. None of these writers call for individual mention here, as they do not add anything essentially new to the principles we have already discussed, but merely adopt an eclectic attitude with regard to them. Two schools of thought, however, must be specifically considered, because, although they were both founded by men who were originally followers of Freud, they have now radically diverged from the orthodox path of psycho-analysis. These are the schools of Adler and of Jung.

Adler's views bear a broad general resemblance to the earlier Freudian theories from which they emerged, except that he finds the driving forces responsible for the neuroses and other mental phenomena not in the sphere of sex, but in the will to power.[15] The precise character of these conceptions cannot be discussed here, but it may be noted that the method of investigation employed and the validity of the conclusions reached are open to all the objections which we have brought forward in the case of the psycho-analytical theories proper. It need only be remarked that the doubts we have expressed as to the scientific trustworthiness of the method of psycho-analysis cannot but be enhanced when we observe the remarkably discrepant results achieved by it in the hands of men who start with different preconceptions.

Jung's work is of very great interest and importance. Its chief tenets may be described as follows: A denial of the paramount significance of sex, and the substi-

[13] MacCurdy: Problems in Dynamic Psychology, 1923, p. 132.

[14] See, for example, the theory of suggestion formulated by Dr. Ernest Jones in his paper The Nature of Auto-Suggestion, Brit. Jour. of Med. Psychol., 1923, p. 208.

[15] Adler's theories were originally developed in Studie über Minderwertigkeit von Organen, 1907, and Über den nervösen Charakter, 1912, both of which have been translated into English. A number of later works have since appeared, including Individual Psychology, English translation, 1925.

tuting of the exclusively sexual libido of Freud by an undifferentiated libido having the significance of a general psychic energy, and capable of expressing itself through any channel of human interest and endeavour; the doctrine that the unconscious includes a collective element common to the race in addition to its personal content; a theory of the psychoneuroses which, although it accepts the Freudian view that the basis of these disorders lies in intrapsychic conflict, radically differs therefrom in its interpretation of the forces engaged and their mode of action. Finally, there is in Jung's conceptions a significant change in the general attitude and in the angle of attack. He insists that a simple reduction of mental processes to their causal elements is inadequate, and that they can only be understood if their teleological and prospective significance is taken into account; and that the symbols found in dreams and elsewhere are not merely "a sign of something repressed and concealed, but at the same time an attempt to comprehend and to point out the way of the further psychological development of the individual."[16]

To consider the scientific validity of these various views would clearly be a formidable task, but we are fortunately relieved of the necessity of undertaking it by Jung's frank admission that his work does not satisfy the canons of science.[17] This admission is based partly on the contention that "purpose" cannot be included in the structure of science because it is opposed to the principle of causality upon which scientific method necessarily depends. We have seen that this contention is disputable, that "purpose" can be included in causality in a wider sense, and that a purposive psychology can therefore be built within the method of science, although it cannot contain the reversible sequences of mechanistic science.[18] Apart from this point, however, Jung's methods are certainly in part extra-scientific, and indicate a reversion to that admixture of psychology with the viewpoints of philosophy, ethics, and religion, which characterised the speculations of older days. But it is important to note that the admixture here is not due to a confusion of thought or a failure to distinguish the functions of the various disciplines, but is deliberately selected as likely to add most to human knowledge.

This is the chief interest of Jung's work in relation to the subject of the present lectures. It expresses a revolt against the view that the method of science must be the paramount arbiter of human knowledge, and attempts to substitute for this the principle that, while human life and thought cannot be explained by concepts belonging to science, they can be explained by other modes of attack. The question at issue is no longer whether psychology is capable of achieving the necessary standards of science, but whether science is capable of fulfilling the requirements of psychology. This is a bold step, but there is a good deal to be said in its justification. MacFie Campbell has remarked: "We are too much accustomed to think that there is only one correct way of dealing with experience, and that the angle, from which we personally come to experience, is the only one from which it can be approached. . . . The results and methods of others we are liable to see only as mistake and error, instead of merely as another way of dealing with experience."[19] It is here that the essential antithesis lies between the doctrines of Jung and of Freud. While Jung abandons science as incapable of dealing adequately with the problems of psychology, Freud strives to keep within its bounds. Moreover, in Freud's later work his conceptions approximate in their form to those of the mechanistic sciences, and the divergence from the point of view of Jung becomes still more marked. We have seen that there is some reason to question how far Freud has achieved success in this aim, but, even if success be admitted, Jung's attitude is a reminder that the method of science may conceivably not be the only weapon whereby the field of psychology can be attacked, and that it may ultimately prove to be an ill-adapted and essentially inadequate weapon. Dr. T. W. Mitchell, in a review of Freud's "Beyond the Pleasure Principle," says: "The pessimism which hangs like a cloud over the whole of this essay is perhaps the inevitable outcome of a belief, however achieved, in a mechanistic theory of life; and perhaps the criticism which will, in the end, invalidate Freud's arguments, may come, not from those who dispute the accuracy of his deductions, but from those who question the fundamental assumption on which all his reasoning rests—the assumption that all the phenomena of life and mind can be interpreted in terms of the physical sciences."[20]

Now no scientist with any appreciation of the real nature of science as a mere weapon for attacking and controlling our experience, and not as a unique road to the attainment of absolute knowledge, would contend that this is the only conceivable weapon, or that other weapons may not prove to be ultimately more effective. He may reasonably hold, however, that at present it is the only weapon which he feels he can trust, that the other methods hitherto proposed lead him into a sea of divergent speculations in which he can find no solid ground whereon to build with surety, and that he is at least justified in pushing the method of science to its limits in the field of psychology, before he consents to abandon a mode of attack which has succeeded in the past few centuries in giving us a control of our experience incomparably greater than anything before achieved.

Whether or no it will ultimately be shown that a psychology founded on the method of science is inadequate, it is at least desirable that we should know with certainty when we are employing that method and when we are going beyond it. The aim of the foregoing criticism of Freud's work has been to set out in broad lines the respects in which it satisfies the canons of scientific validity, and those in which it appears to fall short thereof. The reproach will rightly be levelled at this criticism that it attains to no certain point of acceptance and rejection, and it can only be pleaded in justification that this picture of benevolent scepticism portrays faithfully the stage in the road of conviction to which the mind of the writer has succeeded in travelling.

THE SPHERES OF MEDICINE AND SCIENCE.

These various considerations lead us to a further point. The spheres of medicine and science are not quite the same, however much we may strive to identify them. On the one hand, medicine is partly an art, and on the other hand its essential goal is therapeutic result, and not the acquirement of pure knowledge. Therapeutics has a normative aim, and normative aims cannot be fitted squarely into the structure of positive science. Hence medicine cannot afford to submit itself entirely to the narrow and rigid limits of science, but must demand a greater degree of freedom. In therapeutics it is justifiable to act on hypotheses which lack full or perhaps any scientific validity. Medicine has always claimed this right in very liberal measure, and the principle must be applied to the sanctioning as therapeutic procedures of psycho-analysis and the many variants and derivatives of psycho-analysis, until our knowledge is commensurate with the task of giving or denying to them an assured place in our professional armoury.

Finally, a word may be said concerning the actual and potential relationships of psychopathology to the other avenues of attack which seek to penetrate the field of medicine. In the first lecture it was pointed out that, while psychology must insist upon the

[16] The later developments of Jung's thought will be found in his Collected Papers on Analytical Psychology, English translation, second edition, 1917; Psychology of the Unconscious, English translation, 1916; Psychological Types, English translation, 1923.

[17] Jung: Analytical Psychology, English translation, second edition, 1917, p. xv.

[18] Cf. Lecture II.

[19] MacFie Campbell: On Recent Contributions to the Study of the Personality, published in Problems of Personality (Studies in Honour of Morton Prince), 1925, p. 74.

[20] T. W. Mitchell: Brit. Jour. of Med. Psychol., 1923, p. 243.

privilege of formulating its own concepts and extending these so far as they are found to be useful in the explanation of human life and behaviour, the possibility must always be kept in mind that these concepts may ultimately be capable of reduction to the wider concepts of some other branch of science. Just as the concepts of physiology may in the future be brought under the concepts of chemistry and physics, so may psychology be merged in a wider physiology and psychopathology in a wider pathology. This complete merging may never be practicable; portions of experience only to be dealt with by psychological conceptions may "stick out," however far we may ultimately succeed in thrusting the major part of the phenomena of psychology into a physiological or chemical framework. We have seen, for example, that "purpose," which seems to be an integral factor in psychology, appears to be inherently incapable of incorporation into the structure of mechanistic science.[21] Nevertheless, as each branch of science is justified in endeavouring to explain as much of our experience as it can, the aim of subsuming the concepts of one branch under the wider concepts of another branch is clearly a desirable one in the interests of the unification of knowledge. It will therefore be profitable to inquire how far such an aim has been achieved or shows prospects of being achieved so far as psychopathology is concerned.

We must confess that up to the present time but little solid progress in this direction can be reported, though innumerable attempts have been made to bring the problems of psychology and psychopathology under the conceptions of physiology. Most of these attempts have consisted, however, in the preliminary acceptance of a psychological conception and a subsequent free translation of its terms into hypothetical nerve forces and nerve units, a process which seems to give ineffable satisfaction to certain minds, but which adds little or nothing to our knowledge and understanding. Other attempts have led to the construction of anatomical and physiological concepts built entirely in the air, without basis or means of verification on the plane of objective facts, and therefore without scientific justification or utility. Nevertheless, something has been done, and vistas have been opened up along which prospects of considerable future progress may be discerned. One such vista has been offered by the development of endocrinology. It is not difficult to foresee a time in which the psychological conceptions of instinct and instinctive force may be partially reduced to the conceptions of biochemistry, and Freud has himself envisaged the possibility of certain of his concepts becoming ultimately capable of interpretation in biochemical terms. In the present state of our knowledge, however, all this does not take us very far beyond the realm of speculation. However desirable the merging of psychopathology in general pathology may be held to be, it must be admitted that the time for its consummation has not yet arrived, and that there is a field in which psychopathology can aid our understanding and our practice in a way not yet possible for physiopathology. So long as this holds it is more profitable, both for science and for medicine, that psychopathology should be allowed to march independently as best it can, rather than that general pathology should burst its legitimate bounds in a dubious attempt to incorporate phenomena with which it is at present unfitted to cope.

[21] Cf. Drever, Instinct in Man, second edition, 1921, p. 5. ". . . the psychologist finds in the psychical series important factors, which have, and can have, no analogue in the physical series, as, for example, conscious purpose. It may be argued, therefore, that psychology will always preserve biology from being swallowed up by physiology."

SOUTH LONDON HOSPITAL FOR WOMEN.—Viscountess Cowdray, the chairman, will preside at the annual general meeting to be held at 16, Carlton House-terrace, London, S.W., on Wednesday, April 21st, at 3.15 P.M. when the speakers will be Sir Humphry Rolleston, M.D., Sir Park Goff, M.P., and Prof. Winifred Cullis, D.Sc.

BLOOD-SUGAR STUDIES IN ENCEPHALITIS LETHARGICA.

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J. S. HARRIS, M.D. EDIN., D.P.M.,
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THE following report presents some of the results obtained from a series of investigations that are being carried out in connexion with cases suffering from the certifiable sequelæ of encephalitis lethargica who have come under the care of the Mental Hospitals Committee of the London County Council. By special arrangement the majority of these cases are now admitted to West Park Mental Hospital.

The mental aspect of a series of such cases has been dealt with by one of us (P. K. McCowan),[1] and in this investigation the cases have been submitted to metabolic function tests—viz.: (1) the blood-sugar response to glucose ingestion; (2) the lævulose test for the glycogenetic function of the liver. The lævulose test for liver glycogenetic efficiency was considered worthy of investigation in view of the work of various observers—e.g., Ottonello,[2] and Runge and Hagemann,[3] indicating that inefficiency of liver function is a practically constant feature of post-encephalitic Parkinsonism, leading to the supposition that in the acute stages of the disease the liver is implicated just as it may be in any severe infection, and that in due course its function becomes a dysfunction. If this reputed liver dysfunction was actually present it might be expected that the lævulose test would show it, and incidentally point to hepatic insufficiency as a possible cause of the abnormal sugar curves obtained.

The Blood Curve in Encephalitis Lethargica.

It has been shown that marked abnormalities of the blood-sugar curve following glucose ingestion may occur in mental disorders; also there is evidence that variations in the blood sugar curve may give indications of the progress of the case and also be a useful guide to therapy and treatment.[4] For these reasons the blood-sugar curve following the ingestion of 50 g. glucose has been investigated, and work on the variations produced by therapy, with especial reference to hyoscine treatment, is still in progress. The latter will be reported in a later note, but the types of blood curves found in 15 cases will be reported in this paper. The investigations were made on the morning following a 12 hours' fast, the patients being in bed and the room being kept at a temperature of about 65° F. The blood-sugar values were determined at fixed intervals up to two and a half hours after the ingestion of 50 g. glucose in 8 oz. of water. The blood-sugar estimates were made by the Calvert method.[5]

The normal blood curve is now well known, and it is sufficient to say that in the normal individual glucose ingestion is followed by a variable rise in blood-sugar (about 0·17 per cent. after 45 minutes), followed by rapid glycogenesis and a fall to the original fasting level within two hours of administration of the sugar meal. A sustained hyperglycæmia, according to MacLean,[6] indicates a defective storage mechanism and impaired glycogenetic function of the organism.

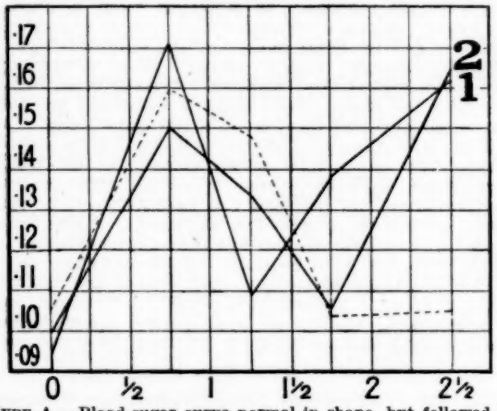
The factors concerned with the rise and the fall of the blood-sugar curve have been dealt with in detail,[4] and a summary may be helpful in the endeavour to appreciate the significance of the results obtained.

The rise of the blood-sugar curve depends on rate of absorption and glycogenolysis, and the fall on excretion, combustion, and storage (glycogenesis). The factors concerned with increased glycogenolysis and resultant hyperglycæmia are: (1) hyperthyroidism and increased secretion of the pars nervosa of the pituitary; (2) increased activity of the sympathetic system with hyperactivity of the supra-

renal glands; (3) increased pH of the liver (Langfeldt [9]). The only known factor concerned with glycogenesis is the pancreas.

Figs. 1 to 4 are Blood-sugar Curves following 50 g. Glucose; Encephalitis Lethargica. The dotted line shows the normal blood-sugar curve.

FIG. 1.

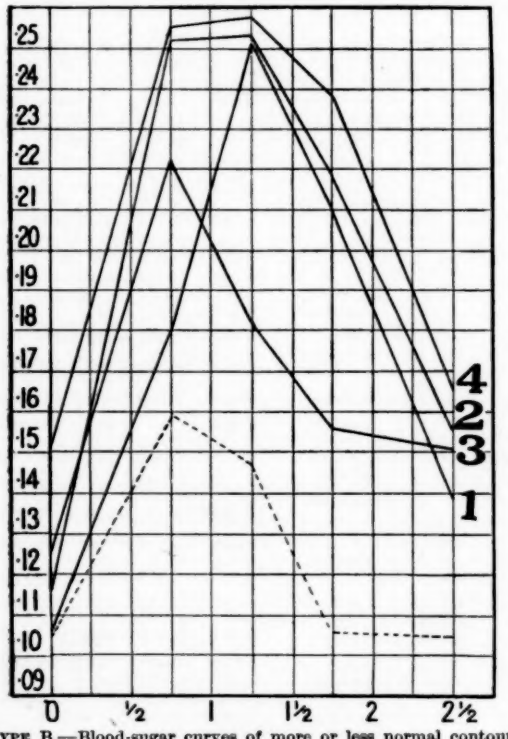


TYPE A.—Blood-sugar curve normal in shape, but followed by a secondary hyperglycæmia.

Types of Blood-Sugar Curves Obtained.

Examination of the blood-sugar curves showed that they fell into three definite and distinct types. These, for the sake of clearness, have been named A, B, and C.

FIG. 2.



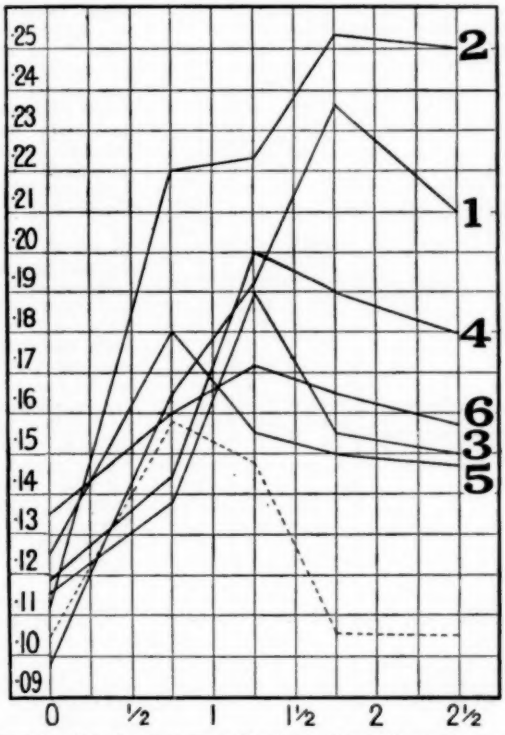
TYPE B.—Blood-sugar curves of more or less normal contour, but with high maximum blood-sugar values.

Type A.—Curves at first normal in shape, but followed by a secondary hyperglycæmia. The blood-sugar percentage reaches its maximum and falls to the fasting level in the normal length of time (about one and a half hours), but thereafter immediately rises to a considerable height. Two cases belong to this group. One shows Parkinsonism plus emotional facility (Fig. 1 (1)), the other shows Parkinsonism plus apathy (Fig. 1 (2)).

Type B.—Curves with a more or less normal contour but with high maximum levels (above 0·2 per cent.). The maximum levels of the curves in this group lie between 0·2 and 0·26 per cent., but each curve at the two and a half hour interval has almost regained the fasting level. There is no sustained hyperglycæmia. Four cases are found in this group and their mental and physical states are enumerated below: (1) Parkinsonism without undue apathy or depression (Fig. 2 (1)); (2) Parkinsonism plus apathy (Fig. 2 (2)); (3) Parkinsonism plus depression (Fig. 2 (3)); (4) slight Parkinsonism plus mild depression (Fig. 2 (4)).

Type C.—Curves showing sustained hyperglycæmia. Six cases belong to this group: (1) Mild Parkinsonism, with depression and persecutory delusions (Fig. 3 (1)); (2) paralysis agitans plus agitated melancholia (Fig. 3 (2)), a case included in the series on the hypothesis that paralysis agitans and encephalitis lethargica are the result of the same pathological condition; (3) Parkinsonism plus emotional facility (Fig. 3 (3)); (4) Parkinsonism plus marked apathy (Fig. 3 (4)); (5) no Parkinsonism but a "difficult" type (Fig. 3 (5)); (6) no Parkinsonism but of "apache" type (Hall) plus epilepsy (Fig. 3 (6)).

FIG. 3.



TYPE C.—Blood-sugar curves showing sustained hyperglycæmia.

Two of these curves show very high maximum levels (Fig. 3 (1 and 2)). Fig. 4 shows a curve which belongs to the C type, but, on account of its extreme maximum value, it was found necessary to place it in a separate diagram. The patient was in a stuporose condition and showed numerous physical sequelæ of encephalitis lethargica.

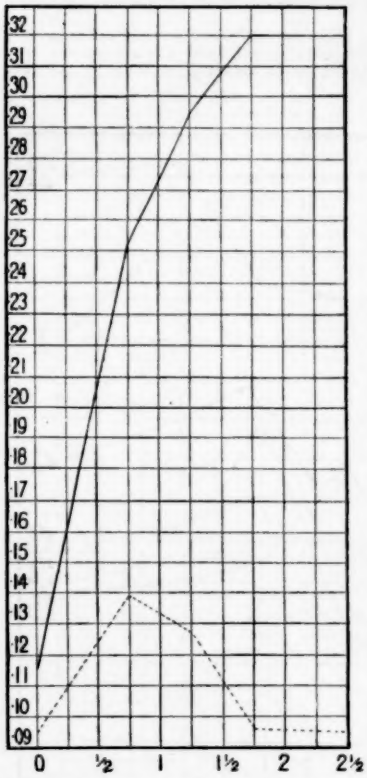
Two of the cases in this group (Type C) showed a slight glycosuria two hours after the ingestion of glucose. In no other of our cases was glycosuria found.

Discussion.

Any attempt to interpret the abnormalities shown in the above-described types of curve cannot in the present state of our knowledge of carbohydrate metabolism be in any respect final, but one or two points seem to be worthy of consideration. In those curves depicted in Fig. 1 as belonging to Type A

we have an appearance which resembles the normal blood-sugar curve. In the latter there is quite commonly a reactionary rise which, however, does not occur to such an extent as in this type of encephalitic curve. It is quite possible that this abnormally marked reactionary hyperglycæmia is due to a state of hyper-excitability in some part of the body mechanisms concerned with metabolism. In Type B (Fig. 2) the curves are all of the kind which one associates with a state of hyperthyroidism, but there was no clinical evidence of this disorder in the cases under review. Type C is composed of curves which show sustained hyperglycæmia. This kind of curve is very commonly met with in other types of mental disorder. It will be noted that the curves that show the most markedly sustained hyperglycæmia with high maximum levels (Fig. 3 (1 and 2)) are found in cases whose mental state is one of melancholia. This agrees with the findings of Drury and Farren Ridge,[8] Mann,[4] and other observers, who have shown that the greatest interference with carbohydrate metabolism is found in patients who exhibit melancholia or stupor. That the latter mental state can be associated with great abnormality in carbohydrate metabolism is further proved by the case shown in Fig. 4. This patient was in a stuporous state when the blood-sugar curve was obtained, and she died some weeks later of encephalitis lethargica. This prolonged hyperglycæmia which is shown by the curves in this group is due to some interference with glycogenesis. It must be remembered, however, that blood-sugar curves showing sustained hyperglycæmia are obtained in infective conditions quite unassociated with mental abnormalities. Thus Olmsted and Gay[9] show sustained curves in a number of cases of focal infection. Pemberton and Foster,[10] investigating chronic arthritis, obtained curves showing sustained hyperglycæmia in severe cases, but normal curves were obtained following removal of the septic focus (teeth or tonsils).

FIG. 4.



Blood-sugar curve showing high blood-sugar values and markedly sustained hyperglycæmia.

Stavely Dick[11] reports hyperglycæmia and high and prolonged blood-sugar curves following glucose administration, after vaccine injection in non-diabetic cases. He would explain this as a defensive hyperglycæmia, but Allen,[12] in his comments on these results, regards them as due to toxic depression of pancreatic function. In this connexion it is of interest to mention that Rosenthal[13] showed that the injection of diphtheria toxin prevented glycogen formation.

It has been suggested by one of us[1] from a clinical study of the cases of this series that encephalitis lethargica is a toxæmia which from an acute onset often passes into a chronic progressive condition. The longer these cases remain under observation the more we are inclined to think that we are dealing with an actively progressive disease like para-syphilis. The sugar curves in the present series support this thesis in that their abnormalities are quite explicable if the patients are regarded as suffering from a chronic toxæmia. It might be mentioned here that one case which is not included in any of the diagrams gave a typically normal sugar curve. This patient on admission was of the "difficult" type of Hall, but at the time of these investigations appeared to have recovered and was discharged a few days later.

From the clinical standpoint it was impossible to divide the cases into three classes which would correspond with the three types of sugar curves. Neither from the physical nor mental point of view could any such correlation be made. Thus cases showing the Parkinsonian syndrome accompanied by mental apathy were found in all three types. It is likely that these abnormal sugar curves are just one expression of a general disordered metabolism, and it is probable that with appropriate investigations further important metabolic defects may be discovered.

Lævulose Test for Liver Efficiency.

In this investigation the lævulose test was performed in 16 cases. As in the glucose investigation the tests were made in the morning following a 12 hours' fast with the patients in bed, at a uniform temperature. In each case 40 g. lævulose (approximating to the lævulose dosage per body-weight of Spence and Brett[14]) was administered in 8 oz. of water, and the blood-sugar values determined at intervals up to two and a half hours after the carbohydrate ingestion. The blood-sugar determinations were made by the Calvert method.[5] The results obtained are given in the table.

Name.	Sex and age.	Type of case.	Percentage of sugar in the blood.				
			Before 40 g. lævulose fasting level.	After 40 g. lævulose.			
				45 min.	75 min.	105 min.	150 min.
S. W.	M 12	Difficult (Hall).	0·100	0·112	0·109	0·098	0·106
R. C.	M 20	Slight P.	0·106	0·120	0·106	0·106	0·112
H. P.	M 23	P.	0·116	0·109	0·109	0·112	0·116
F. Mc.	M 21	P.	0·106	0·106	0·112	0·100	0·116
E. D.	M 50	Depressed.	0·109	0·128	0·120	0·112	0·109
M. K.	F 26	P. + depressed.	0·109	0·112	0·109	0·109	0·106
D. G.	F 31	Apache.	0·106	0·109	0·116	—	0·109
M. Cl.	F 29	P + apathy.	0·124	0·133	0·128	0·109	0·112
A. M.	F 36	,,	0·098	0·098	0·103	0·120	0·109
E. C.	F 18	Apache.	0·128	0·109	0·109	0·100	0·095
B. D.	F 20	Difficult.	0·098	—	0·124	0·133	0·124
V. C.	F 18	P. + stupor.	0·138	0·150	0·144	0·150	0·124
C. D. 1	M 30	P. + depressed.	0·112	0·138	0·138	0·106	0·106
,, 2			0·120	0·150	0·128	0·109	0·097
J. C. 1	M 50	P. + apathy.	0·095	0·112	0·120	0·128	0·133
,, 2			0·109	0·116	0·116	0·109	0·103
S. H. 1	M 19	P. + E.F.	0·103	0·116	0·133	0·120	0·120
,, 2			0·100	0·116	0·116	0·112	0·100
G. T.	M 63	Paralysis agitans.	0·109	0·120	0·124	0·106	0·106

P. = Parkinsonism. E.F. = emotional facility.

The lævulose test is based on the experimental findings of Sachs[15] and F. C. Mann and Magath,[16]

that probably the liver alone is concerned with glycogenesis following lævulose ingestion. It was generally accepted that the normal individual gave no appreciable blood-sugar rise following a lævulose meal, whereas cases of hepatic disease showed disturbance of the glycogenetic function and a rise of blood-sugar resulted. The variations in the normal response have been investigated by one of us (S. A. Mann [17]) and by Tallermann,[18] and it is evident that an appreciable blood-sugar rise can occur in the normal individual.

The interpretation of these results presents a certain degree of difficulty, for observers are by no means unanimous as to what should constitute a positive result; that is, what is to be looked upon as definitely indicating the presence of hepatic insufficiency. Beaumont and Dodds [19] consider that if the blood-sugar level exceeds 0·14 per cent., or if a rise of 30 mg. above the fasting level occurs after 40 g. lævulose, then the reaction may be accepted as positive. De Wesselow,[20] on the other hand, states that if a hyperglycæmia of 0·13 per cent. occurs and persists for more than two hours after the lævulose ingestion it can safely be concluded that there is some hepatic dysfunction present. According to Beaumont and Dodds's criteria four cases (B. D., V. C., C. D. 1, J. C. 1) show positive results; according to De Wesselow one case (J. C. 1) is definitely positive. From the examination of normal cases and a large number of mental cases,[17] however, it would seem that a positive reaction should be considered not so much in relation to the blood-sugar level attained, but more with regard to the persistence of hyperglycæmia two hours or longer after the lævulose ingestion. It is the general contour of the curve which is important. In the normal person the blood-sugar level after a lævulose meal has returned to the fasting level by the end of two to two and a quarter hours, and any definite tendency on the part of the curve to remain elevated to an appreciable extent after this period of time should be considered as denoting the presence of hepatic insufficiency. Judged from this standpoint three cases (B. D., J. C. 1, S. H. 1) show positive reactions. It will be noted that certain of the cases (C. D., J. C., S. H.) which gave results which might be considered as indicating a positive reaction according to one or more of the various criteria were given a second meal of lævulose after an interval of seven days, when all of them gave strictly normal curves. This would seem to indicate, if reliance is to be placed on the lævulose test, that the liver insufficiency in these cases was of a purely temporary nature.

It can therefore be concluded that, although certain observers maintain that there is hepatic inadequacy in encephalitis lethargica, this is not borne out by the results of the lævulose test. It must be remembered, however, that the value of this test in demonstrating slight degrees of hepatic derangement is somewhat problematical.

Blood-Sugar Fasting Levels in Encephalitis Lethargica.

It is held by some investigators that an increase of sugar in the cerebro-spinal fluid is diagnostic of post-encephalitic conditions. Our work agrees with that of Halliday [21] in controverting this opinion. Goodwin and Shelley [22] have found a constant ratio between the fasting blood-sugar level and the spinal fluid sugar (60 per cent.). In view of this finding, the fasting blood-sugar levels of the present series support the conclusions of Halliday that there is no characteristic increase of the sugar in the C.-S.F. in fasting post-encephalitic patients. An increased blood-sugar and spinal fluid value may occur in this condition, but is by no means characteristic of it, and no diagnostic value can be placed in such findings.

Conclusions.

1. In post-encephalitis lethargica there is definite derangement of carbohydrate metabolism as shown by the blood-sugar curves. 2. The lævulose test does not support the contention that there is definite permanent hepatic insufficiency in post-encephalitis lethargica. 3. The majority of post-encephalitis lethargicas show a hyperglycæmia following glucose ingestion, markedly sustained in 50 per cent. of cases. 4. The mental states of depression and stupor were associated with the most pronounced abnormalities of carbohydrate metabolism. 5. No correlation could be found between the clinical pictures and the types of blood-sugar curves obtained. 6. Although no diagnostic value can be placed on blood-sugar curves in post-encephalitis lethargica, the fact that the only normal curve was obtained in a patient who had recovered from his psychosis suggests that prognostic significance may be attached to them. 7. The hyperglycæmia found in all the cases is quite in keeping with the suggestion that encephalitis lethargica is of the nature of a toxæmia, usually acute in onset, but becoming chronic in nature.

In conclusion, we would express our indebtedness to Dr. Golla, director of the Central Pathological Laboratory, Maudsley Hospital, for his unfailing interest and guidance, and to Dr. Roberts, medical superintendent, West Park Mental Hospital, for permission to publish details of cases.

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THE STEAM CAUTERY.

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THE destruction of malignant tumours by heat is probably one of the most ancient forms of surgery, but with the introduction of methods of direct removal the actual cautery fell into disuse. Yet there are many malignant growths whose removal by direct surgery is difficult or impossible, and for these heat has again been invoked, by the use of the diathermy current. Over the actual cautery this possesses the advantage of deep penetration, whilst, instead of being rapidly burnt away, the tissues are coagulated. The slow separation of the slough allows time for granulations to form, so that the tumour is converted into a foreign body and is cast off by natural processes.

Precisely the same result may be obtained in a much simpler manner by the slow penetration of heat from a cautery maintained at a low temperature, and this is very conveniently done by a current of dry steam. For the past two years I have been using an instrument of my own device founded on this principle, and the results have exceeded my expectations. It is constructed as follows. (See figure.)

Steam is generated in a small boiler (A), solid "meta fuel" being conveniently used as a source of heat. The steam is superheated by being carried directly through the flame, and it then passes along a thick rubber tube (B) to an insulated handle (C). This terminates in a nozzle on to which applicators of various forms (D, *a*, *b*, *c*, *d*, and *e*) can be screwed, and the steam, after entering the applicator, returns by the handle to the discharge tube. It will thus be seen that the applicator is maintained constantly at a temperature closely approximating to 100° Centigrade.

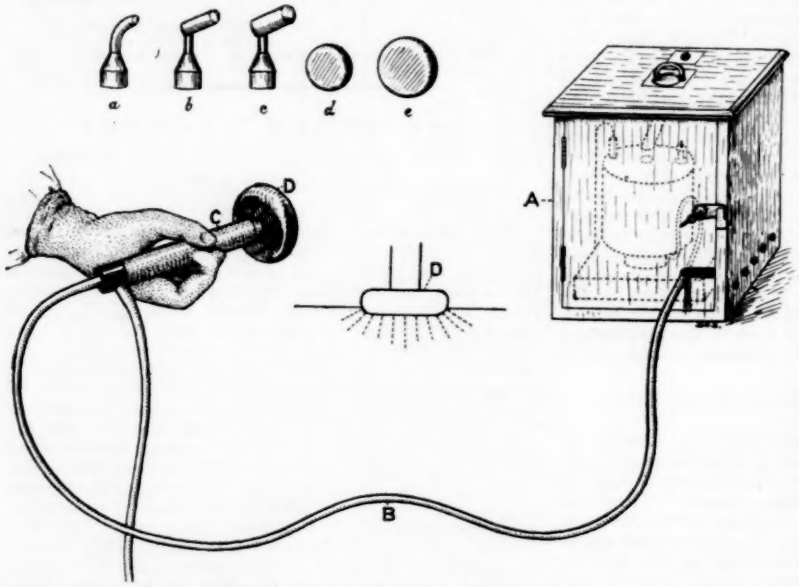
The applicators vary in size from small points up to metal discs 3 inches or more in diameter.

Method of Application.

So long as the applicator is kept in contact with the tissues heat slowly penetrates and produces coagulation, the depth of penetration for any one applicator being simply a function of the time and of the permeability of the tissues. With the large applicators and on moist tissues penetration takes place at the rate of about 1 inch in ten minutes. This can be easily demonstrated upon a piece of beef-steak, and a section will show at once the complete coagulation which results, an exceedingly tough coagulum being formed.

Though this method resembles diathermy, it differs in important details. In contrast to diathermy very large applicators may be used, the rate of penetration being slightly greater with large applicators than with small ones. With large applicators it is an exceedingly powerful machine, and I venture to think that it is the most potent appliance we at present possess for dealing with large masses of inoperable growth. The rate at which great masses of fungating carcinoma coagulate and disintegrate before it is astonishing, and yet in the end dense coagulum is left which gives ample protection to the deep tissues and allows time for their recovery, for the closure of large vessels, and for the formation of granulation tissue.

Although the instrument was originally devised for dealing with large inoperable growths, it has been found in practice to be applicable to a number of other conditions. The depth of penetration is uniform over the surface of application and is under perfect control, so that small superficial growths and ulcers can be treated with certainty and yet without risk to the underlying deep structures.



The method has been found of peculiar value in the treatment of epithelioma of the skin, especially where this arises on a scarred surface, as after the treatment of lupus and similar conditions by X rays. We have, unfortunately, seen a large number of these cases, and they sometimes present a surgical problem of great difficulty. Excision leaves a widely gaping wound, which heals but slowly owing to the underlying fibrosis and the endarteritis which the rays have caused. Suture of the margins is useless, and grafts take but poorly. We have found that destruction of the growth by the steam cautery, easily carried out under local anæsthesia, leaves a much smaller wound, protected by a tough coagulum. When this separates a granular surface will be found on which a graft takes readily.

Illustrative Cases.

The following cases illustrate a few of the applications of the method.

CASE 1.—A. B., a man aged 53. For 33 years he had suffered from lupus which had extended over practically the whole of his face and neck, and the whole of this area was now covered by the scars of healed lupus. He had been treated with Finsen light at the London Hospital and with X rays elsewhere. For five years a nodular growth had been gradually spreading above the left angle of the mouth. A small part of the nodule was excised and the remainder and the whole of the base treated with the steam cautery. Sections showed it to be a squamous carcinoma. The cauterised area healed rapidly and after nine months it cannot be distinguished from the rest of the surface. There is no trace of recurrence.

CASE 2.—C. D., a man aged 40. Ten years ago he had prolonged treatment with X rays for sycosis barbæ, and the whole of the beard area was covered by scar tissue. For a few months an ulcer had been spreading in the left malar region; it was now about 1 inch in diameter, and had all the characteristics of an epithelioma. It was treated by the steam cautery and four weeks later a Thiersch graft was applied. The graft took at once. Six weeks later, though still perfectly healed, the appearances suggested a recurrence of growth below the graft. For safety's sake the graft and the tissue beneath it were excised. The section showed nothing at all but fibrous tissue covered by epithelium. The small wound left healed rapidly.

CASE 3.—E. F., a man aged 47. Twenty years ago lupus began on the left side of his face and spread until the whole of the cheek and the left side of the neck were involved. It was treated with X rays and this area was converted into scar-tissue. For two and a half years a warty out-growth on the scar had steadily increased in size, until it now formed a huge fungating mass extending from the nose to the mastoid process and down into the neck. The whole of the growth was removed with the steam cautery and six weeks later it was found possible to graft three-quarters of the area, the grafts taking well on sound granulation tissue. The growth, however, spread further down the neck and involved the vessels, so that in spite of the local success further treatment of the case had to be given up as hopeless.

CASE 4.—G. H., a woman aged 24. For a year she had suffered from hyperthyroidism with tachycardia and slight enlargement of the thyroid. She had been treated on several occasions with X rays, but after one of these she noticed a severe erythema of the epigastrium. The treatment was discontinued for a time, but on its resumption the erythema recurred, the skin broke down, and a deep ulcer formed. It was then found that the shield of the X ray tube was defective. In the epigastrium there was an ulcer 3 inches in diameter and extending deeply into the tissues; the recti muscles themselves were exposed. It was thought that such an ulcer was almost sure to become malignant, but as it was grossly septic, and as its effective excision must at least reach the peritoneum, it presented a very difficult problem. By means of the largest applicator of the steam cautery the whole ulcer was dried up and rendered sterile, and this huge sterile coagulum was then excised. On freeing the deep tissues and undercutting the skin it was found possible to close the wound and it healed by first intention, leaving only a median scar.

CASE 5.—J. K., a man aged 21. A year previously he had been thrown from a motor-bicycle and his face badly scored. The right side of the face and the left side of the nose were covered by deep scores rendered very noticeable by the fact that they contained pigment, probably tar, situated in the dermis. Excision of such extensive scarred areas

was out of the question. With a small point attached to the steam cautery each scar was carefully coagulated so that the actual points of pigment sloughed out. The result was extraordinarily good, the resulting white scars being scarcely noticeable.

Wide Range of Utility.

It will be seen that the steam cautery has a wide range of utility. With large applicators it can be used as an instrument of great power for the destruction of large masses of malignant growth. With small points it can be used in the most delicate manipulations of facial surgery. It has probably many applications in the treatment of pathological conditions of the skin and the accessible mucous membrane, and under certain circumstances its powers of sterilisation can eliminate gross sepsis and greatly simplify surgery. It appears to be capable of accomplishing all that can be done by diathermy, with greater facility, with less risk, and at a minute fraction of the cost.

The instrument was produced in my experimental laboratory at the London Hospital. It can now be obtained from Messrs. Allen and Hanburys.

ELECTROCARDIOGRAPHIC CHANGES IN RHEUMATIC CARDITIS.

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THE modifications of cardiac rhythm in acute rheumatism were investigated by Parkinson, Gunsen, and Gosse,[1] who found some alteration in 30 per cent. of cases. Recently, Cohen and Swift,[2] working on the same lines, noted heart-block, flutter, and fibrillation during the acute attack. Both these investigations were limited to the time in which the patient remained in bed, and in nearly every instance acute articular rheumatism was present at the time of investigation.

In children it is well known that the rheumatic infection may take different forms. There may be no acute onset with pyrexia, the joints may not be affected at all, but the infection may reveal itself by the appearance of subcutaneous nodules, by the involvement of the central nervous system, giving rise to chorea, or be disclosed by a history of migratory limb pains, more or less severe, which may be accompanied by anæmia, tonsillitis, listlessness, and loss of weight, &c. In any of these forms there is a special tendency for the heart to be attacked, so that a child may be brought up for the first time on account of limb pains and loss of flesh, and be found to have an apex-beat outside the nipple line and a developed mitral lesion. This condition has been described as rheumatic carditis. Although well recognised clinically, there are as yet few observations controlled by the electrocardiograph on children with this affection who were not sufficiently ill to be confined to bed. We have, therefore, observed a series of 50 children attending a special rheumatic out-patient clinic. The clinic consisted of about 400 patients, of whom 40 per cent. had cardiac lesions. Those utilised were not specially selected; their ages varied between 4 and 13 years.

The patients were examined by two observers independently, and the physical signs compared. The size of the heart was determined by taking the apex-beat as the left border, and dullness to percussion for the right border. When any doubt arose the findings were checked by X ray examination. In grouping the cases according to valve lesions the following method was adopted. A few cases with heart enlargement were found to have no murmur, or a systolic which was localised to the apex. These were termed myocardial on the assumption that any incompetence of the mitral valve was due to the enlargement of the left ventricle rather than to disease of the valve. Mitral disease was assumed to be present when the systolic murmur was well conducted. Any diastolic or presystolic murmur at the apex was taken to denote the presence of mitral stenosis. The last group consisted of those in whom aortic regurgitation was present in addition to the mitral lesion. To these were added two cases who presented the physical signs of adherent pericardium.

Summary of Cases.

The following abnormalities were found:—

1. Evidence of impaired conduction from auricle to ventricle through a lengthening of the P.R. interval to over 0·2 of a second was noted in two cases. In both there was an established mitral lesion. This is known to be associated with heart-block in the adult, and is probably due to an extension of the fibrosing process from the base of the valve down to the A.V. conducting system.

2. Impaired intraventricular conduction "arborisation block," as shown by a widening of the Q.R.S. complex with notching of the R wave, was noted in one case (see figure). This patient had a P.R. interval

Leads II. and III. showing a P.R. interval of 0·08 sec., a notched and widened Q.R.S. complex, and an early depression of the T wave.

of 0·08 second, or half the average interval found in the series. It is probable, however, that the impulse arose normally in the sino-auricular node, and that the remainder of the P.R. interval was lost in the widened Q.R.S. He had no valve lesion, but the heart was enlarged.

3. Inversion of the T wave in leads II. and III. was present in two cases. One at the age of 12 had a double valve lesion, and had already been in the hospital for cardiac failure. The other had a large heart without valve lesion. Inversion of T in lead III. only occurred in a further six cases, but was not taken as evidence of myocardial disease.

4. A depression of the S.T. interval followed by a small T occurred in three cases. This took the same form as that caused by digitalis. No digitalis, however, had been given. One child died three months after examination. Another had an adherent pericardium and a very large heart. The third, who does not show it so characteristically, has already been described for abnormalities with the Q.R.S. complex.

5. Extrasystoles were found once only. They were auricular in origin; were frequent, and had been noted for over a year. The patient had a large heart without a valve lesion.

6. Sinus arrhythmia of a slight grade was commonly present when the rate was slow. The child in whom it was most marked had an advanced carditis with a large heart and mitral incompetence.

7. Predominating hypertrophy of either ventricle. Although several cases of aortic disease were examined, in one only was there any sign of a left ventricular preponderance, and in that the S wave measured 7 mm. A right-sided preponderance was found in two cases. In one at the first examination the

1. MYOCARDIAL GROUP.

Case.	Initials.	Age.	Evidence of rheumatism.			Cardiac signs.				Electrocardiograph.	
			(*a*) Acute rheum. (*b*) Chorea. (*c*) Nodules.	Pains.	Tonsillitis.	Apex in cm. from nipple.	Right border in cm. from mid-sternum.	Sounds at apex.	Sounds at base.	Rate.	—
1	H. B.	10	—	1 m.	—	21/12/24 N.L.	5	Systolic after exercise.	—	98	P.R. = 0·08. Q.R.S. = 0·1 sec. with notching of R in leads II. and III.
						28/3/25 1 cm. O.N.	3	Sounds evenly spaced.	—		Early depression of T in all leads (see Fig.).
2	H. C.	10	—	3 y.	+	2 cm. O.N.	3	Soft systolic.	—	80	Frequent extra auricular systolic. T wave : 1 mm. in lead II. : inverted in lead III.
3	M. H.	9	—	2 y.	+	15/11/24 I.N. slapping.	5	Short systolic sounds evenly spaced.	—		
						14/2/25 N.L.	5½	Systolic conducted out. 1st reduplicated on left side.	P.2 +	108	Inversion of T in leads II. and III.
4	D. H.	7	—	1½ y.	+	I.N.	3	1st just audible.	P.2 +	105	T : 1 mm. in lead II. : inverted in lead III.
5	H. P.	9	—	1½ y.	T.R. 6 m.	2½ cm. O.N.	5	1st +. Systolic conducted out 1 inch.	—	90	Right-sided preponderance.
6	M. S.	9	(*a*) +	3 m.	—	1 cm. O.N.	4	Soft systolic.	P.2 +	102	Normal.
7	A. E.	8	(*a*) +	7 m.	+	,,	—	Systolic just audible.	—	86	,,
8	E. K.	10	(*a*) 1924	1 y.	—	2 cm. O.N.	4	Soft systolic.	—	86	,,
9	B. W.	6	(*a*) 1924 (*c*) +	+	—	N.L.	2	,,	—	70	,,

2. MITRAL REGURGITATION.

10	D. G.	10	—	4 y.	+	2 cm. O.N.	2	1st replaced by harsh systolic conducted out.	P.2 +	100	P.R. interval = 0·21 sec.
11	E. H.	5	(*c*) +	2 m.	—	1 cm. O.N.	2	Rough systolic conducted out.	—	129	Normal.
12	S. K.	10	(*a*) 1923	+	—	,,	4	Systolic conducted out.	P.2 +	100	,,
13	W. B.	6	—	3 m.	+	I.N.	3	Humming systolic.	—	124	,,
14	H. W.	12	—	4 y.	+	1 cm. O.N.	5	Systolic conducted out.	P.2 +	90	,,
15	J. L.	8	(*b*) 1922 (*c*) +	+	—	,,	2	,,	,,	100	,,
16	W. U.	8½	(*b*) 1923	+	—	N.L.	2	,,	,,	75	,,
17	J. T.	6½	—	2 y.	+	I.N.	2	,,	,,	110	,,
18	W. B.	9	—	3 y.	+	,,	—	,,	,,	86	,,
19	R. E.	9	(*b*) +	+	—	N.L.	3	,,	,,	84	,,
20	H. P.	11	—	+	—	1 cm. O.N.	5	,,	,,	102	,,
21	F. A.	10	(*b*) 1922	+	—	N.L.	—	,,	,,	130	,,
22	F. C.	13	(*a*) 1919	+	+	,,	5	,,	Rough P. systolic.	90	,,
23	M. P.	5	—	9 m.	—	,,	2½	,,	P.2 +	102	T inverted in lead III.
24	E. P.	10	—	1 y.	—	,,	2	,,	,,	90	Normal.

3. MITRAL STENOSIS.

25	L. C.	11	F.A. 3 m.	+	+	15/11/24 N.L. Heave and slap.	3	Systolic conducted out. Short presystolic leading up to slapping 1st sound.	—	110	Right-sided preponderance.
						14/2/25 6 cm. O.N. slapping.	5	Systolic with thrill ringing presystolic.			
						30/3/25 N.I. by percussion 3 cm. out. Slapping + +.	5½	Long diastolic and presystolic. No systolic.			
26	I. M.	4½	(*c*) +	+	—	1 cm. O.N.	2½	Systolic conducted out. Rumbling diastolic.	—	132	Normal.
27	L. P.	8	(*a*) 1920	+	—	2 cm. O.N.	3	Systolic conducted out. Early diastolic.	—	100	,,
28	R. C.	12	—	4 y.	—	3 cm. O.N.	3	1st + +. Ringing diastolic. Systolic conducted out.	P.2 +	120	,,
29	L. B.	7	(*a*) 1922	+	—	N.L.	2	Systolic conducted out. Early diastolic.	,,	86	T wave : 1 mm. in lead II. : inverted in lead III.
30	D. P.	12	—	+	—	I.N.	—	Systolic conducted out. Early diastolic.	,,	92	Normal.
31	H. M.	10	—	1 y.	—	2 cm. O.N.	3	Systolic conducted out. Early diastolic and short presystolic.	—	130	,,
32	W. G.	10	(*a*) +	+	—	1 cm. O.N.	5	1st +. Early diastolic.	P.2 +	90	,,
33	R. S.	7	—	6 m.	—	N.L.	—	Systolic and early diastolic.	—	100	T inverted in lead III.
34	K. K.	9	—	1 y.	+	,,	3	,,	P.2 +	94	Normal.
35	B. F.	6	(*b*) 1 m.	+	—	I.N.	3	,,	,,	76	,,
36	E. W.	9	—	6 m.	+	2 cm. O.N.	3	,,	—	92	T inverted in lead III.
37	M. B.	9	(*c*) +	4 m.	—	1 cm. O.N.	3	,,	—	98	Normal.
38	F. W.	10	(*b*) +	1 y.	—	,,	4	,,	P.2 +	78	,,
39	A. M.	8	—	6 m.	—	2 cm. O.N.	3	Harsh systolic. Early diastolic and presystolic.	,,	120	,,
40	L. P.	13	(*a*) 1924	+	—	3 cm. O.N.	—	Systolic and early diastolic.	—	58	,,
41	D. P.	11	(*a*) 1922	+	+	1 cm. O.N.	—	Diastolic and presystolic.	—	94	,,

M. = months. Y. = years. T.R. = tonsils removed. F.A. = fainting attacks. N.L. = nipple line. O.N. = outside nipple. I.N. = internal to nipple. P.2 = pulmonary 2nd. A.D. = aortic diastolic.

Remarks.—CASE 11. Died four days later from pancarditis.

4. MITRAL AND AORTIC.

Case.	Initials.	Age.	Evidence of rheumatism.			Cardiac signs.				Electrocardiograph.	
			(*a*) Acute rheum. (*b*) Chorea. (*c*) Nodules.	Pains.	Tonsillitis.	Apex in cm. from nipple.	Right border in cm. from mid-sternum.	Sounds at apex.	Sounds at base.	Rate.	—
42	W. H.	12	—	2 y.	—	6th space N.L.	3	Systolic conducted out. Ringing diastolic.	A.D.	128	T absent in lead I. Early depression of T in leads II. and III.
43	R. M.	12	(*b*) 1920 (*b*) 1923	+	+	1 cm. O.N.	3	Diastolic and presystolic.	,,	76	P.R. interval = 0·23 sec.
44	E. E.	8	(*c*) +	6 m.	—	29/11/24 1 cm. O.N.	2	Systolic conducted out. 1st reduplicated.	,,	100	S wave = 7 mm. in lead III. Otherwise normal.
						17/2/25 3 cm. O.N.	3	Systolic conducted out.	,,	104	
45	S. R.	12	—	3 y.	—	13 cm. left of mid-sternum.	2	Short systolic.	,,	140	T inverted in leads II. and III.
46	E. M.	11	(*b*) 1924	+	—	N.L.	3½	Systolic conducted out. Diastolic rumble.	,,	76	Normal.
47	F. L.	10	—	8 m.	—	6th space 3 cm. O.N.	—	Systolic conducted out. Diastolic rumble.	,,	96	,,
48	T. S.	14	(*b*) 1923	+	+	Heaving. I.N.	4½	Systolic conducted out. Diastolic rumble.	,,	100	,,

5. ADHERENT PERICARDIUM.

49	C. M.	10	(*c*) +	+	—	Heaving + +. 6th space 6 cm. O.N.	6	Rough systolic conducted out. Diastolic.	—	84	Early depression of T in leads II. and III.
50	A. C.	14	(*a*) 1916	+	—	7th space 6½ cm. O.N.	3	Systolic conducted out. Diastolic rumble.	P.2 +	86	Normal.

Remarks.—CASE 42. Died with pericarditis three months later. CASE 44. Between examinations had been in ward with subacute attack with pericarditis. CASE 49. Recurrent pericarditis during four years. Broadbent's sign positive. CASE 50. Broadbent's sign positive.

heart was not greatly enlarged, and there were signs of mitral regurgitation with some stenosis. Three months later the apex was 2½ inches further out, and the stenosis had progressed considerably. In another month and a half the apex had receded 1 inch, but was now formed entirely by the right ventricle; there was no evidence of mitral regurgitation—merely an advanced stenosis. The other, in whom the preponderance was less, had on the first examination no evidence of valvular disease; six weeks later she had signs of an early stenosis.

Discussion.

Pathologically, as Poynton and Paine [3] pointed out, the essential characteristic of rheumatic carditis is the Aschoff body. These inflammatory nodules can always be found microscopically in the myocardium, usually in the neighbourhood of the arterioles. They have a tendency to clear up, and indeed, at no time seem to exercise much effect on the function of the heart. Carey Coombs [4] notes that though they are found in numbers in the septum, yet heart-block in children is rare. He therefore postulates some toxic action on the metabolism of the muscle cells to account for the heart failure during the acute attack. In most cases the muscle recovers from this toxic action, and the patient has to face the risk of reinfection, and to meet the effects of the invasion on the valves which do not recover in the way the muscle does, owing probably to the poverty of their blood-supply.

Such a toxic action affecting the whole of the cardiac musculature could not be expected to influence the electrocardiographic curve, and one such case taken on the day of admission, four days before his death, showed a normal curve, with the exception of a tachycardia. It seemed, however, probable that recovery would often be incomplete, and that after the acute carditis had subsided the electrocardiograph might be able to differentiate between those cases in which, excluding the reinfection risk, the valve lesion was the only factor to be considered, and those in which an abnormality in the curve denoted some additional myocardial damage. In this series eight gave evidence of myocardial disease, so that out of the whole clinic 16 per cent. of the heart cases, or 6 per cent. of the total cases of rheumatism, were affected. The risk of reinfection cannot be assessed. Moreover, one child who was taken before and after a subacute attack with pericarditis, during which he had been in hospital, showed no alteration in the curve, although clinically he was in a considerably worse condition.

For the remainder of the cases the prognosis is dependent upon the valvular lesion. The dilatation and hypertrophy which take place during the active carditis stage appear not to be due to any valve lesion; they affect each ventricle and do not influence the electrocardiographic curve. When the myocardium is not permanently damaged this enlargement subsides to the point at which it is necessary to compensate for whatever valve lesions there may be. This compensatory hypertrophy was not sufficient in 94 per cent. of cases to cause one ventricle to preponderate over the other. One child with aortic disease showed a small amount of left-sided preponderance. Two with mitral disease showed a right-sided preponderance. In one case, in which the preponderance was great, the stenosis progressed rapidly.

Summary.

(*a*) Fifty children with evidence of active rheumatic carditis have been examined electrocardiographically. (*b*) Lengthening of the auriculo-ventricular conduction time was present in two cases. Impaired intraventricular conduction was present in one. (*c*) Abnormalities in the T wave in leads II. and III. occurred in five cases. (*d*) Extra-auricular systoles occurred in one. (*e*) Preponderance of one ventricle over the other was unusual; a right-sided preponderance appeared to have a bad prognosis.

We must express our thanks to Dr. M. A. Cassidy for placing his department at our disposal, and to Dr. R. C. Jewesbury for permission to use the clinical material.

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Clinical and Laboratory Notes.

A CASE OF CROSSED DYSTOPIA OF THE KIDNEY.

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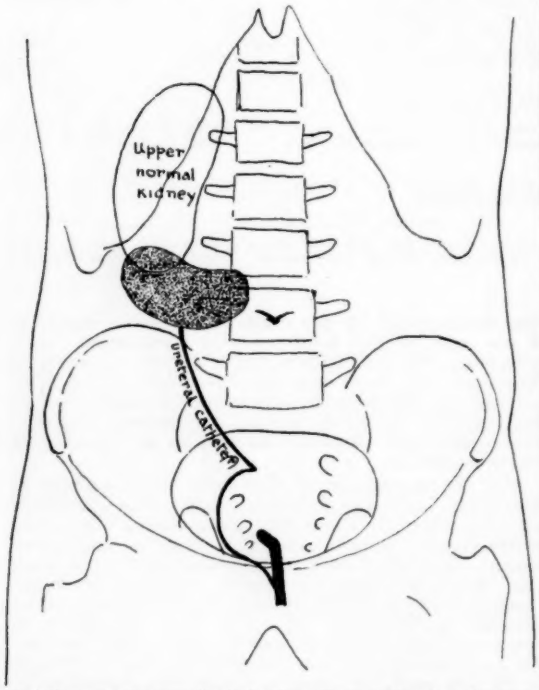
DURING the course of a laparotomy the following abnormality in the position of the kidneys was found.

L. H., male, aged 52 years. One kidney, normal in size, shape, and position, was found on the right side. A second kidney, about 3 in. long and 2 in. broad, lay obliquely, at a lower level and in front of the lower pole of the normal kidney; its hilum directed upwards and slightly to the left, its surfaces facing anteriorly and posteriorly, its long axis occupying the middle part of a line joining the umbilicus



No kidney shadow on the left side. Course of ureter shown as a thick line leading from the cystoscope to the lower of the two right-sided kidneys. The normal kidney is outlined, the lower one stippled.

and the lowest part of the right tenth costal cartilage. The inner and somewhat lower pole reached to within an inch of the middle line, in front of the inferior vena cava. The convex margin of the kidney lay in the umbilical plane, and the outer and upper pole overlapped the lower pole of the normal kidney by about one inch. Both kidneys lay in the retro-peritoneal tissue, completely separate from each other, and neither of them showed abnormal mobility. There was nothing unusual about the stomach, duodenum, or colon. Owing to a considerable deposit of fat, neither the ureters nor the renal vessels could be made out definitely. No trace of any kidney could be found in the left loin or elsewhere on the left side.

Cystoscopic Examination.—The urethra was normal, also the mucous lining of the bladder. The latter was of normal capacity. A prolonged search revealed only one ureteric orifice on the right side. The right end of the plica ureterica was prominent and smooth and formed two well-marked folds, one above and the other below the ureteric opening. An opaque catheter was passed into the ureter and ran up without a hitch as far as the lower kidney. A skiagram was taken with the cystoscope and catheter in place and is shown in the accompanying tracing. On the left side the plica ureterica was ill-defined, and no ureteric opening could be found. A shallow pocket, which looked as if it might be the opening, contained a little calcareous material, easily dislodged with the end of the catheter. The pocket was less than a quarter of an inch deep, and no jets could be seen coming out of it.

Apart from gall-stones, on account of which the operation was done, no other abnormality was discovered when the patient was examined.

TWO CASES OF LESION OF THE PONS VAROLII OCCURRING UNDER GENERAL ANÆSTHESIA.

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BY a coincidence the two patients, whose cases are here recorded, died within an hour of one another. They had been anæsthetised in the same theatre, and the symptoms presented by each patient, though of rare ocurrence, strongly resembled those of the other. As ether from the same batch had been employed, it was at first subjected to criticism, but the post-mortem findings, coupled with the absence of bad symptoms in other patients, have, we think, exonerated the ether.

The First Case.

Thrombosis of the Basilar Arteries during an Operation for Advanced Carcinoma of the Breast. (By Dr. McCardie).—A woman, aged 60, suffering from cancer of the breast, was brought to the anæsthetic room at the General Hospital on Sept. 30th, 1925, for operation, at which the breast and axillary contents, which included one or two enlarged glands, were removed by Mr. Leonard Gamgee. Examination previous to operation had shown no evidence of secondary deposits. The patient was rather fat, but appeared to be in fair condition, and nothing specially abnormal was found in the lungs or the heart, except that the cardiac impulse was rather weak. The urine did not contain casts, blood, or tubercle bacilli, but there was a little pus. She said she had nasal obstruction, also a cold and an occasional cough. 1/100 gr. atropine was injected half an hour before operation, but no other drugs were given. E_2C_1 mixture of chloroform and ether, aided by a little ethyl chloride, was administered on an open mask, and induction being quiet and particularly rapid, anæsthesia was maintained throughout by the E_2C_1 mixture.

Her condition was quite good for about 25 minutes; anæsthesia was then fairly deep, the eyelids being half open and the corneal reflex nearly absent, but the pupils were fully contracted. At this point respiration, which had always been very quiet, stopped rather suddenly, although the pulse remained of fair quality and the colour good. Her tongue was pulled out and her chest was compressed a few times, the colour changed a little for the worse for a minute or so, and then respiration quickly reappeared. The operation was not interrupted. Her pupils still remained very small. The operation was finished and the patient sent back to bed apparently in fair condition. Nevertheless, she did not recover consciousness, but remained in coma. Gradually her breathing became stertorous, and her pupils pin-point in size. The coma deepened and death occurred 20 hours after completion of the operation. The temperature, which was 98·6° F. in the evening, gradually rose to 106° just before death. At the time of the operation I ascribed the unusual symptoms to toxæmia, probably of cancerous origin.

At the *post-mortem examination*, performed by Prof. Haswell Wilson, the following notes were made: Pathological summary: Carcinoma of the breast; generalised dissemination; cerebral softening. Heart: 350 g. Extreme degree fatty infiltration, especially on the right side. Slight atheroma of the coronary arteries. Lungs: Atrophied. Hilum and lower lobe of right lung showed large mass of tumour growth, which had eroded the pulmonary vein in one place. There was a mass of mediastinal glands infiltrated by tumour growth. Liver: 1300 g. Fatty degeneration and infiltration. Numerous small metastases throughout substance and on surface. Gall-bladder: A necrotic mass resembling tumour growth was found at the tip. Kidneys: Pale and fatty. Spleen: Atrophied and fibrous. Suprarenals: The left showed metastases of growth with hæmorrhage. Small nodule in right organ. Mesenteric glands:

They were hard and were infiltrated with tumour growth resulting in thrombosis of some vessels in the mesentery. Stomach: Several fungating metastases of tumour growth were discovered on opening the stomach along the lesser curvature. Brain: Thrombosis of the basilar arteries and of the Sylvian arteries. Multiple metastases in the cortex. Several old root softenings were found. A more recent hæmorrhage was discovered in the right half of the cerebellum.

The case, then, was one of acute dissemination of very widely spread cancer. Such patients are toxic, and stop breathing very easily. The arterial thrombosis would explain the coma, stertor, and pin-point pupils. It is difficult to prove when exactly thrombosis commenced, but, judging from the size of the pupils, it appears likely that the pons was injured shortly before respiration ceased temporarily. It is possible that the slowing of the circulation from exhaustion led to the clotting of blood, which initiated the chain of events leading to the fatal issue.

The Second Case.

Instances of restoration of the heart-beat by direct cardiac massage, in patients who have collapsed when under the influence of chloroform, are by no means rare. Unfortunately, death usually follows a few hours later, and the case to which I draw attention is not an exception to this rule. Nevertheless, in several respects, this is an unusual case from which useful inferences may be drawn.

An Unusual Case of Temporary Recovery of Respiration and Heart-beat in a Patient who apparently had Died under Anæsthesia, with a Fatal Sequel due to Associated Pontine Injury. (By Dr. Featherstone.)—The patient, J. H., a well-developed man of 48 years, had suffered from indigestion for three weeks. On Sept. 30th, 1925, at 9.30 P.M., a duodenal ulcer perforated and the doctor who was summoned sent the patient to the Birmingham General Hospital without administering any opium or morphia. Laparotomy was performed at 5.35 A.M. by Mr. W. S. Adams, the resident surgical officer, to whom I am indebted for the notes of the operation. Thus there was an interval of about eight hours between the perforation of the ulcer and the operation.

When anæsthesia was commenced by one of the house surgeons the patient's general condition was quite good, although he was much distressed by the pain, and the abdomen was rigid. A chloroform-ether mixture, E_2C_1 preceded by atropine 1/100 gr. and no other drug, was employed for induction, and the patient struggled vigorously for nearly four minutes. Anæsthesia was continued with ether by the open method, but, although respiration was unobstructed and oxygen was given, the colour was inclined to be cyanotic. There was a small amount of mucous secretion. The surgeon found a pin-hole perforation of the duodenum, close to the pylorus, with free fluid and some flakes of lymph. As the pulse was weak and the anæsthetist was not satisfied with the man's condition, the surgeon contented himself with suturing the perforation without performing a gastroenterostomy.

After anæsthesia had lasted for about 20 minutes, while the surgeon was completing the duodenal suture, the colour improved considerably. There was only a light degree of anæsthesia. Tubes were inserted to the pelvis through a suprapubic stab, and to the right kidney pouch. The peritoneum had been sutured halfway along when the respiration became jerky. Anæsthesia was still light and the peritoneal suture was completed, and four deep silkworm gut sutures were inserted. At this point the patient ceased to breathe. The colour was pink, although the pulse could not be felt at the wrist. Compression of the chest showed that the air-way was clear, and, while artificial respiration was continued, the wound was reopened. No cardiac impulse could be felt through the diaphragm. Cardiac massage, both through the diaphragm and afterwards by fingers inserted directly into the pericardium, did not elicit any response.

Two or three minutes after the heart had stopped 1 c.cm. of adrenalin was injected into the right ventricle without effect. Artificial respiration and cardiac massage were continued for three or four minutes, and then a second injection of 1 c.cm. of adrenalin was made as before. About 10–15 seconds after the second injection the heart commenced to beat. The impulses were weak at first, but after about ten systoles the contractions were of good force and the tone of the heart muscle was firm. Thus the heart had stopped for nearly ten minutes. Artificial respiration was continued without effect until a big stertorous inspiration occurred one hour after the heart had re-started. In the next ten minutes the patient took about a dozen voluntary breaths, and then breaths came at gradually diminishing intervals, until normal respiration was established about 20 minutes after the first voluntary response. The abdomen was closed by "through-and-through" sutures. During the state of apnœa the pulse-rate was 120 per minute, the pupils were half dilated, and the corneal reflex was absent. After the return of voluntary respiration the pupils gradually contracted until the patient left the theatre, but they were not at that time "pin-point." On the patient's return to the ward at 7.50 A.M., continuous rectal salines, the foot of the bed on chairs, and other restorative measures were instituted.

I saw the patient at 10.15 A.M., at the request of a surgical colleague, who suggested, as a first impression, that the condition of the patient resembled morphine poisoning. At that time both pupils were "pin-point," and there was a divergent squint, the left pupil being turned to the left. The breathing was stertorous, 36 per minute. The pulse was vigorous, 112 per minute, and the blood pressure reading was: systolic 160 mm., diastolic 75 mm. There was general muscular rigidity and hyper-excitability. Both knee-jerks were absent. The temperature was rising—viz., at 9 A.M. = 100° F.; at 10 A.M. = 102°; and (to anticipate) at noon = 103·4°; and at 1 P.M. = 104·4° (compare Dr. McCardie's case).

It was ascertained that no morphia had been given, and in view of the pin-point pupils, the stertorous breathing, the high blood pressure, and the rising body temperature, a diagnosis of hæmorrhage in the neighbourhood of the pons varolii was made. So striking were the symptoms that several surgical and medical members of the staff were asked to see the case and general agreement with this opinion was expressed. Furthermore, it appeared possible that the hæmorrhage had taken place as the result of the prolonged struggling during induction of anæsthesia. One of the physicians to the hospital tentatively put forward the suggestion that thrombosis during the arrest of the heart might have led to a small embolism in the pons, followed by extravasation of blood from the damaged vessels. The patient died at 1.45 P.M., about five and a half hours after restoration of respiration.

At the *post-mortem examination*, performed by Prof. Wilson, the brain was found to be œdematous, and there was extreme congestion of the vessels in the region of the pons, especially round the floor of the Sylvian aqueduct; but there was no sign of embolism or hæmorrhage. The other organs were healthy, with the exception of the duodenal ulcers and general congestion of all the viscera. It was considered that the appearance of the pons varolii was compatible with the symptoms observed and with the fatal issue, but that histologically it would not be possible to demonstrate gross damage to the nervous tissues owing to the post-mortem changes in the 24-hour interval between death and autopsy.

The following points appear to be of special interest: (1) The cessation of heart-beat and respiration in a patient of fair general condition while under open-ether anæsthesia. (2) The restoration of the heart-beat by direct cardiac massage, with intracardiac adrenalin as an important factor. (3) The return of respiration after apnœa which had persisted for not less than 75 minutes. (4) The patient's general resemblance to a case of cerebral hæmorrhage or fracture of the skull, such as one is accustomed to see in the accident wards. (5) It may be concluded, with some justification, that stoppage of the circulation in the brain for ten minutes had led to irreparable damage to the pons and medulla. If we accept this as the explanation of the fatal issue which is so frequently the early sequel in cases of restoration of the heart-beat by cardiac massage, we shall be emboldened, when we find the heart has ceased to beat during anæsthesia, to undertake cardiac massage without any delay.

We have to thank Mr. Leonard Gamgee and Mr. Seymour Barling, the surgeons in charge of these cases, for their kind permission to record them.

HOSPITALS AND MOTOR ACCIDENTS.—It was stated at the annual meeting of Leeds General Infirmary that last year 768 victims of motor accidents were treated, and that, although the lives of many of these patients were saved, their contributions were "exceedingly small." Much the same story is told in the annual report of the Victoria Infirmary, Newcastle-upon-Tyne. There 595 injured persons were treated, of whom nearly one-half were retained as in-patients.

Medical Societies.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF SURGERY.

AT a meeting of this Section held on March 26th Mr. R. C. B. MAUNSELL, the President, took the chair, and Dr. MAURICE HAYES opened a discussion on

The X Ray Treatment of Exophthalmic Goitre.

He reviewed the results of radiotherapy in 100 cases of Graves's disease (90 females and 10 males) treated by him during the last 15 years. Sixty-two patients who completed the course of treatment were cured and able to follow their usual occupations. Fourteen were improved; they comprised eight who left off treatment before they were finally discharged, and six who were still under treatment. Sixteen abandoned treatment for various occupational reasons. The ultimate results of eight cases were unknown. There was recurrence in two cases; in one of them it followed encephalitis lethargica, and in the other it followed influenza. Four of the patients in the series had had previous operation. Three underwent operation shortly after the commencement of X ray treatment; one of these died, and another had a toxic adenoma. X ray treatment was given daily or on alternate days for a period of three weeks. After a month's interval this was repeated. Two or three series of applications were usually sufficient.

Dr. Hayes remarked that statistics of the surgical treatment of exophthalmic goitre were copious and reliable, whilst those of treatment by radiation were as yet incomplete; but a comparison of the results indicated that X ray treatment would probably furnish about the same percentage of permanent cures as surgical treatment in the best hands. The advantages of X rays were: (1) there was no mortality resulting from the treatment; (2) patients would submit to it more readily than to operation; (3) it was applicable to inoperable and post-operative cases. It had the disadvantage, on the other hand, that the treatment was prolonged and that there was a risk of atrophic changes and telangiectases in the irradiated skin. There was ample clinical evidence from the amelioration which followed radiotherapy to justify its employment on rational grounds as a most useful adjunct in the treatment of Graves's disease.

Dr. T. G. HARDMAN said that he was an enthusiastic advocate of X ray treatment in exophthalmic goitre. In June, 1925, he had been able to collect about 60 cases, and follow their course for several years back. On the whole, he thought, the results were very satisfactory. Over 75 per cent. of the patients were cured of their symptoms, 22 per cent. were greatly improved, and the rest were slightly improved. There had been no deaths. Some of his cases he had been unable to trace, but he had since learned that two of them had been successfully treated by operation. He thought that too much emphasis could not be laid on the fact that radiologists only advocated the use of X rays as part of medical treatment. The success of radiotherapy depended very largely on the strictness of the medical régime. The cases which did best were those which were treated in private, where they could have the absolute rest and regulated life which were so essential. Greer, of America, divided hyperthyroid cases into four groups: (1) those with simple hyperthyroidism, in which he claimed to get 100 per cent. cures; (2) those with acute exophthalmic goitre, in which he claimed to get almost miraculous results; (3) those with chronic exophthalmic goitre, in which treatment was much more difficult (cases which came for treatment within 6 or 12 months of the development of symptoms did well, but if they came later they were much more difficult to treat and more likely to relapse); (4) cases of ordinary goitre, in which he advocated surgical treatment altogether. In X ray treatment there was no immediate mortality; the treatment was easy to carry out, and there was no scarring such as was found after operation. If it was unsuccessful, it did not prevent patients from being operated on afterwards, although some surgeons said that operation was made more difficult by the formation of fibrous tissue as a result of radiotherapy. He personally thought that every patient should be given a chance of X ray treatment before being submitted to the risk of operation—however small this might be.

Prof. J. M. O'CONNOR said that undoubtedly the thyroid gland had its use and significance in the body, but it was very hard to say what its use was. It had been thought at one time that exophthalmic goitre was due to an excess of adrenalin in the blood, but this idea had been proved wrong. The estimation of basal metabolism seemed to him a very heavy weapon to use for examination of a disease which could be examined by much more simple methods.

Mr. H. STOKES said that he did not think statistics of much value in discussing the treatment of exophthalmic goitre, because it had only recently been recognised that there were two varieties of the disease—toxic adenoma and Graves's disease. The mortality in toxic adenoma was just as high as ever, but with the use of iodine in Graves's disease the mortality had come down to 2 per cent. The accounts of treatment at the American clinics gave the impression that patients were admitted in a very grave condition, were given iodine for three or four days, were then operated on, got up within a week, and within a fortnight were able to leave the clinics and go back to work and lead a normal life. He had operated on three cases of Graves's disease recently, and in one case, after three months, the patient had been able to return to work and was now perfectly well. There were undoubtedly cases of well-marked exophthalmic goitre which got well in a remarkably short time, but they were apparently a mixture of toxic adenoma and Graves's disease.

Prof. T. G. MOORHEAD said that before it was possible to estimate the value of any treatment in any disease, it was necessary to know what was the natural course of that disease without treatment, or (in the present case at any rate) when treated only by the simplest medical methods such as rest and sedatives. Information on this point was very scanty. No reliable figures existed showing the actual mortality incidence. Campbell, in a paper communicated to the Association of Physicians a couple of years ago, had determined the death-rate throughout Great Britain and Ireland, and estimated that roughly ten persons per million living died of exophthalmic goitre annually, though there was considerable variation in different districts. In 1922, 22 deaths had been recorded in the Free State; in 1923 there were 18 deaths. It was worth noting that 24 of these 40 deaths occurred in people over 40 years of age, from which it might perhaps be deduced that death usually followed many years of illness, since most cases of Graves's disease were encountered in the earlier years of life. The Free State figures worked out at roughly seven deaths per million living. Quite plainly, however, none of these figures gave any information about the number of deaths in proportion to the number of people who suffered from the disease. Marion Read, who observed 100 cases over a period of about six years, reported altogether six deaths, and four of these immediately followed surgical treatment. From these scanty figures it appeared that the medical death-rate was, at any rate, not high. It was equally difficult to get reliable figures about recovery from the disease. It was common knowledge that many cases recovered completely without any treatment, and that, on the other hand, many drifted on as chronic invalids. The general opinion was that about 50 per cent. of recoveries might be expected, and any treatment that did not improve on that figure might be regarded as of no value. Kessell, of New York, indeed, stated that in 82 per cent. of cases observed by him, economic recovery occurred in from four to six months, without

any special treatment; but he admitted that many of his recovered patients still suffered from considerable disability, and few would agree with his statement that practically all cases tend to recover if left alone.

In considering surgical treatment, said Prof. Moorhead, it was necessary to distinguish between immediate and remote results. The immediate mortality in some clinics was very low; in the Mayo Clinic and in Cleveland the mortality was only about 1 per cent. On the other hand, Kessell and Hyman reported an operative mortality of 9·3 per cent. in a group of cases collected from various clinics, and Marion Read, in a small number of cases, found a mortality as high as 31 per cent. From this it was clear that, although surgery under special conditions was comparatively safe, it was by no means a treatment to be universally adopted. The ultimate results following operation were very difficult to arrive at. Some surgeons led people to believe that their cases were completely cured in a month or so after operation; but Marion Read, reporting on 25 cases followed for from three to five years after operation, described only two as cured and nine as improved. Twenty-five cases was a very small number on which to base any statements, but the conclusions derived some importance from the fact that the cases were definitely followed up and a description was given of their condition some years after operation.

Speaking of X ray treatment, Prof. Moorhead said that he felt very enthusiastic. In a series of 51 private cases which he had reported in June, 1925, he had been able to follow up 44. Of these, two definitely did badly, showing no response to treatment, and one died of influenzal pneumonia; but there were 34 complete cures, and seven other patients were very much improved. That is to say, there were 77 per cent. of cures and 15 per cent. were improved—a total of 92 per cent. good results. These figures supported those given by Dr. Hayes, and pointed strongly to a combination of medical and X ray treatment as giving the best possible results—results, moreover, unattended by any danger. In treating cases in this way he had found that acute cases did much better than milder and more chronic cases, and that private patients, on the whole, did better than those in hospital. Details of treatment were extremely important. The patient should remain in bed, on a restricted protein diet for the first month, and sedatives should be given as required, quinine bromide being particularly useful. As regards the application of X rays a double course was all important, and he advised two periods of treatment, each of about three weeks duration, with an interval of a month between the two; the thymic region should be irradiated as well as the thyroid. Of late he had been using lugol solution as an addendum to his treatment. It was customary to say that iodine was of particular value in preparing patients for operation. That was doubtless true, but it was also of value, he thought, in hastening recovery by means of X rays. When iodine was used the pulse-rate came down more rapidly than otherwise, and the thyroid gland soon became harder. In most cases the patients were practically well within six months of the beginning of treatment; and by well he meant completely well—that is, they had gained weight, had a normal pulse-rate, no tremor, no sweating, and were free from nervousness. Traces of goitre often persisted, and often some exophthalmos; but these were unimportant when other symptoms were absent. All his cases claimed as cures were able to lead normal lives and were without disability.

Dr. H. F. MOORE commented on how little was known of the actual physiology of the thyroid gland, and hoped that the discovery of thyroxin would prove a stimulus to renewed physiological research. The pathology of the gland was in an even worse state of confusion; as a classification of types of enlargement, he thought Aschoff's the most suitable. He summarised recent advances in knowledge of thyroid function, speaking particularly of Kendall's work on the thyroxin molecule and its physiological properties. The effect of iodine in hyperthyroidism was of great interest, and any evaluation of treatment should be controlled by clinical observation and estimation of the basal metabolic rate. His cases were all treated under such control by general treatment, iodine, and X rays, but he did not hesitate to have recourse to surgical treatment where he thought it necessary.

Sir WILLIAM DE C. WHEELER said that the literature of exophthalmic goitre had become quite unwieldy. In the surgery of the disease Albert Kocher had been the great pioneer. Of the cases treated between the years 1883 and 1889 Kocher stated that 76 per cent. were cured, and that the mortality was 6·7 per cent. In 1910 the mortality in Kocher's clinic had been reduced to 4·5 per cent. During the last 15 years immense strides had been made in surgical treatment, which had brought the mortality in the clinics of Mayo and Crile down to about 1 per cent. The mortality following operation for toxic adenoma was much higher—about 3·5 per cent. The results of surgical operation could be accurately estimated, but the ultimate mortality from failure of medical treatment was difficult to ascertain. Sir William Wheeler said that he had referred to the records of 76 thyroid cases operated upon since 1910, but did not consider his statistics accurate because there was confusion between some of the cases of toxic and non-toxic goitre in the hospital records. He had had two deaths from true Graves's disease during this period. One of them was from acute hyperthyroidism in the days before iodine was administered as part of the pre-operative preparation, and the other was due to mechanical difficulties in breathing following an extensive operation. Recent technique had eliminated this danger. In nearly all of the cases operated on by him medical treatment and radiotherapy had been tried first; but it was quite possible that a number of them had not submitted faithfully to the directions of the physicians. Operations were not shirked in any instance because the disease was advanced and the patients were grave surgical risks, but in such cases the operative procedures were very carefully graded. He emphasised the fact that Graves's disease was a disease of cycles; that the stage of development was followed by one of maximum intensity, and that then there was retrogression and remission. In the quiescent period operation was comparatively safe, but during a crisis operation should never be done. He was struck by the dramatic improvement which sometimes followed a few days after operation. The statistics given in the literature were often faulty owing to the comparison between inefficient surgery and efficient medicine, or efficient surgery and inefficient medicine. To obtain anything like accurate information, the statistics of the best authorities, surgical, medical, and radiological, should be balanced. If this were done it would be found that the honours were easy. In most cases a combination of methods was desirable. Lugol solution was an immense help in preparing patients for operation and it would control post-operative remissions. About 5 per cent. of patients did not react to the administration of iodine.

Dr. R. STUMPF said that it was found that if cases considered most favourable for operation received a preliminary X ray treatment about a fortnight beforehand, the operative risk was lessened. He reviewed a series of cases of which the majority were treated by X rays alone, in 90 per cent. of which there was either cure or great improvement; if there was no improvement after several irradiations, then operation was done. He had found that ill-effects were more likely to occur after the use of superficial rays than with deep rays. Cases had been known in which adhesions were found at operation although the patients had never been X rayed, and he felt that their presence should not be considered an insurmountable barrier to operation. He always irradiated the thymic region, even when no gland was present, and in cases of simple goitre he always preferred X ray treatment

to operation, even in juvenile cases. He had seen several cases of simple goitre in which the tumour had entirely disappeared.

Mr. A. CHANCE referred to the special circumstances of patients of the hospital class, which often prevented adequate medical or X ray treatment. It was in these cases, he felt, that operative treatment showed to advantage. The object of X ray or surgical treatment was to destroy a certain portion of the thyroid gland, and, if this could be done safely, it was desirable, because it could certainly be done more speedily by surgical means than by any other. It was unquestionable that in certain clinics where these cases were handled by one team, as in the Mayo and Crile clinics, the mortality was in the region of 1 per cent.

Dr. M. F. O'HEA had treated a large number of cases of exophthalmic goitre by X rays and thought that his results were roughly about 75 per cent. of cures. Referring to the condition of patients after treatment, he said that after the first treatment there seemed to be an exacerbation of symptoms; but this, he thought, was the result of fright rather than of the treatment itself.

Dr. W. C. STEVENSON said that for a long time now he had not used superficial rays in cases of exophthalmic goitre, because these rays did not affect the pathological cells which were found in exophthalmic goitre. If deep X rays were given it was impossible for the cells to escape some effect; these rays tended either to destroy the cells altogether or to stimulate them to return to a more normal condition. The fibrous tissue which was produced by X rays was not the cause of the cure but the result of it. Deep X rays were also more efficient because they penetrated deeper. In some cases radium had an advantage over X rays, for in cases where very slight but very continuous stimulation was required this could be given better by radium than by X rays.

Mr. W. PEARSON said that he had not found that X ray treatment made operation any more difficult. Fibrosis was produced, but it was in the stroma of the gland itself, and made no difference as far as operation was concerned. He, personally, had never had any difficulty in getting the thyroid gland out cleanly and bloodlessly in cases in which there had been fairly extensive X ray treatment.

Dr. HAYES, replying, referred to the possible rôle which thyroxin played in exophthalmic goitre. If antecedent X ray treatment really caused adhesions and rendered operation more difficult, this was a thing which radiologists should definitely try to improve. He did not think that X ray treatment alone would cure exophthalmic goitre, and the more he saw of the condition, the more convinced he was that a radiologist would not cure a case unless he was also a physician, and a good physician. The most essential part of the treatment was the medical régime.

EDINBURGH OBSTETRICAL SOCIETY.

AT a meeting of this Society held on March 10th, Dr. R. W. JOHNSTONE, the President, in the chair, Dr. WILLIAM FORDYCE gave a short note on a case of

Ectopic Gestation with Unusual Clinical Features.

The patient, a multipara of 36 years, was admitted into his ward with a history of severe vaginal hæmorrhage following what was supposed to have been an incomplete abortion, as she had three weeks previously passed a lump per vaginam as big as her closed fist. This was corroborated by her medical attendant. After her admission she was examined under chloroform and the os was found to be patulous, but nothing was found inside the uterus, although there was a somewhat foul-smelling discharge. The patient progressed satisfactorily for a week; there was no further discharge and the temperature remained normal. She then began to complain of colicky pain in the right hypochondrium and became slightly jaundiced. Cholecystitis was diagnosed and a laparotomy was performed two weeks after her admission to hospital. The abdomen was found to be full of bright red blood and a fœtus was found later amongst the clots. In all probability the sac had been ruptured by bimanual palpation immediately before operation.

In reviewing the case Dr. Fordyce said that he thought it must be classed as a "combined" gestation (both intra- and extra-uterine), for on examination on admission, though she was very stout, there was nothing like an ectopic gestation to be palpated, and yet before her operation a swelling could be felt distinctly. The pain and tenderness in the right hypochondrium was very difficult to explain.

Prof. CARLTON OLDFIELD (Leeds) read a communication on

Symptoms without Signs.

This title, he said, was chosen because there was no more common case than the patient who complained of symptoms, but in whom no physical signs could be detected. Out of 1200 patients examined by Prof. Oldfield only 434 (36 per cent.) showed any gross disease, and this he deemed to be due to the majority of cases being functional. The usual symptoms in such functional cases were headache, backache, weariness, sleeplessness, and frequency, precipitancy or incontinence of urine. For such conditions curettage was unnecessary and harmful, as also were operations such as ventrosuspension, cervical repair, and appendicectomy. Backache was found in 67 per cent. of all Prof. Oldfield's cases, but in only 34 per cent. of these was any organic disease present. Retroflexion was present in only a few more cases than anteflexion, which confirmed the opinion that retroflexion, though often accompanying backache, was not the cause of it. Cervicitis (with or without laceration) and endometritis were not noted as being in any way definitely associated with backache; though, as all these complaints were common, they were bound to occur together in many cases. Backache, therefore, was usually a functional complaint. Incontinence of urine was then discussed, the incontinence being of the active kind and not passive as in a vesico-vaginal fistula. In 12·8 per cent. of Prof. Oldfield's cases there was incontinence, and yet 29 per cent. had urethrocele; among the cases of incontinence 28 per cent. had urethrocele and 28 per cent. prolapse. Prolapse was present in more cases with incontinence of urine than without, and therefore was probably a causal factor, though only 7 per cent. had cystocele; but urethrocele, on the other hand, occurred more frequently in cases without incontinence. Incontinence was, he considered, purely functional, which was proved to his satisfaction by the fact that application under anæsthesia of the electrocautery cured nearly every case. This would have been impossible if it were due to pathological or anatomical reasons, as was generally supposed. Speaking of retroversion of the uterus, Prof. Oldfield quoted the statistics of Dr. MacGregor Young. 1000 puerperal uteri were examined on the twelfth day after labour and retroversion was found in 50 cases, but six months later only two were found to be still retroverted. Pessaries might relieve symptoms sometimes, but it was probable that prolapse was present in such cases. He advised that the words retroflexion and retroversion should be discarded; pessaries would then cease to be used or operations to be done in such cases. Many women were made unhappy by being told that their womb was twisted. In conclusion he touched on the pernicious vomiting of pregnancy, which he considered always to be functional; he advised treatment by suggestion and feeding, which in his experience had always been successful.

Dr. F. J. BROWNE read a paper on an experimental investigation into

The Ætiology of Accidental Hæmorrhage and Placental Infarction.

After briefly discussing the various views held on the cause of accidental hæmorrhage and the relationship between it and toxæmia, nephritis, and liver changes, he described the origin of the present research. In

1923, during an experimental investigation into the paths of intranatal infection in the newly born infant, a rabbit (20 days pregnant) was injected with an emulsion of *B. pyocyaneus* in saline. It was found six hours later to be bleeding profusely from the vagina. Under ether anæsthesia the abdomen was opened and a large retroplacental hæmatoma was discovered, entirely, or almost entirely, separating the placenta from its attachment. On microscopic examination an acute nephritis was found affecting the glomeruli and convoluted tubules. Attempts were made to reproduce this result on 34 subsequent occasions, but without definite result. Some factor essential for success was evidently missing. From clinical observation of patients Dr. Browne was impressed by the frequency with which in cases of accidental hæmorrhage he could obtain a history pointing to chronic nephritis. In one case of concealed hæmorrhage there was no doubt about the presence of chronic nephritis, as albuminuria had been present with accidental hæmorrhage in the previous pregnancy. The patient had been followed up in the interval between that and her next pregnancy and it was found that the albuminuria had persisted. In this pregnancy albuminuria was present from the start and at the seventh month she was admitted to hospital with a concealed hæmorrhage. Dr. Browne therefore believed that if he could set up a chronic nephritis and introduce *B. pyocyaneus* in the pregnant rabbit so suffering he should be able to produce accidental hæmorrhage. In order to cause chronic nephritis sodium oxalate was used in 1 per cent. solution according to the method described in 1924 by Shaw Dunn, Haworth, and Jones.

Thirty-five rabbits were treated during three months by injecting them intravenously with the oxalate at frequent but varying intervals. The blood-urea was regularly examined and the rise of blood-urea was taken as the clinical index of the onset and duration of nephritis. Eight rabbits died during the experiment, and histological examination of the kidneys revealed an acute nephritis chiefly affecting the convoluted tubules. In animals that had been under treatment for eight weeks or more a very well-marked interstitial nephritis was found as well. After three months' oxalate treatment the remaining rabbits were mated, and at the twentieth day of pregnancy a small dose of sodium-oxalate was again given. Next day the blood-urea was examined and a small dose of emulsion of *B. pyocyaneus* in saline was given intravenously. This experiment was tried in six cases in succession and in all of them it was successful; more or less profuse hæmorrhage started within a few hours of the injection. After bleeding had continued for some time the rabbit was killed by chloroform and the condition of the uterus and placenta examined. All the placentas (seven in number) showed typical red infarcts exactly resembling those found in the human subject in cases of albuminuria. In one of the placentas there was a large clot between the membranes and the cornual wall, while there had been several profuse external hæmorrhages. There had therefore been produced accidental hæmorrhage, external and concealed, with hæmorrhage in the uterine muscle and infarction. These conditions, singly or in combination, could be produced at will and this particular experiment was therefore discontinued.

Dr. Browne also described other experiments that had been carried out since. These had shown: (1) That the dose of oxalate at the twentieth day of pregnancy was unnecessary, for bleeding could be produced by injecting *B. pyocyaneus* alone, provided the kidney had been previously damaged by injecting oxalate over a prolonged period causing a chronic nephritis. The mere injection of *B. pyocyaneus* was now sufficient to bring about an acute exacerbation of the nephritis, as shown by rise in blood-urea, and lead to hæmorrhage. (2) A previously existing chronic nephritis was unnecessary, for if an acute oxalate nephritis were produced and organisms then introduced bleeding occurred. These two alternative methods seemed, however, to be somewhat less certain than the method first adopted. (3) The coliform group of organisms seemed to be the most potent in causing a positive result. (4) In every case in which hæmorrhage had so far occurred, if a chronic nephritis were previously existing, an acute or subacute exacerbation of the nephritis preceded the bleeding.

BRIGHTON AND SUSSEX MEDICO-CHIRURGICAL SOCIETY.

AT a meeting of this Society held on April 1st, Mr. H. J. WALKER, the President, in the chair, Dr. JAMES MENNELL read a paper on

The Principles and Practice of Manipulative Surgery.

He drew attention to the dictum quoted by Wharton Hood as being always in the mouth of Hutton, that "the twist is the thing." In all joints, he said, with the exception of the hip-joint, it was possible to perform some movement not under the voluntary control of the patient. The most conspicuous movement of this type was that which resulted on the application of tension; and it was often useful to perform these movements as a preliminary to carrying out the normal movements of the joint. Manipulative treatment had suffered a set-back owing to the too rigid adherence to Hilton's teaching of rest and pain. The mistake had been made in the past of failing to realise the essential difference between movement and function, a distinction so ably drawn in the work of Lucas-Championnière. Dr. Mennell put in a claim for the more general recognition of the osteopathic definition of a lesion, which he quoted as being "the immobilisation of a joint in a position of normal movement," the immobilisation being due to: (1) locking within a joint, without actual displacement, or the formation of adhesions; (2) definite adhesions within the joint; (3) adhesions in the soft tissues around the joint; (4) adhesions in the extra-articular structures; (5) adaptive shortening in the elastic tissue of the muscles which control the movements of the joints; or (6) hysteria. He drew particular attention to the danger of putting a joint through its full range of anatomical movement when limitation of movement was marked and of long standing. In these cases it was merely desirable to pass the first dead point, and then to allow the patient to regain the increased freedom of movement before an attempt was made to gain a yet wider range as the result of subsequent manipulation. After-treatment was also essential. Dr. Mennell ended his paper with a plea for more scientific consideration of lesions of joints of the back, condemning the practice of readily dubbing every aching back as neurasthenic instead of trying to form an accurate diagnosis of the physical lesions present, and giving them appropriate treatment. He then gave a demonstration of the manipulation applicable to various joints.

Dr. H. M. GALT showed microscopical slides.

ROYAL INSTITUTION.—On Tuesday, April 20th, at 5.15 P.M., Prof. J. Barcroft will lecture on the Spleen.

BOSTON CITY HOSPITAL.—The report of this great American hospital for the year ending Jan. 31st, 1925, which has just been issued, shows that the total expenditure exceeded £337,000, and that the daily cost of in-patients was 15*s.* per head. The very large new out-patients' department contains a great number of small examining rooms, "self-respecting citizens who are compelled to resort to a hospital clinic being entitled to the same privacy that they would have if treated in a physician's office." Each of these rooms contains a lavatory basin, and, it is added, "the physician is expected to wash his hands after the examination of each patient."

PAPWORTH TUBERCULOSIS COLONY.—This valuable and successful colony has just celebrated its tenth anniversary. A beginning was made at Bourn, in Cambridgeshire, with 12 patients; there are now more than 200, and in the village settlement connected with Papworth Hall 70 or more settlers and their families occupy separate houses. The village is recruited from patients who have been in residence for six months, and it now has over 500 inhabitants, of whom 85 are children. These settlers are busily occupied in carpentering, poultry-farming, printing, cabinet-making, upholstery, shoemaking, tailoring, or sign-writing, and there is now a village store which employs some of the women patients.

Reviews and Notices of Books.

NEURITIS AND NEURALGIA.

By WILFRED HARRIS, M.D. Cantab., F.R.C.P. Lond., Senior Physician to St. Mary's Hospital and to the Hospital for Epilepsy and Paralysis, Maida Vale. London: Humphrey Milford, Oxford University Press. 1926. Pp. 418. 12*s.* 6*d.*

Dr. Wilfred Harris has compiled a useful and practical volume of which the contents have an even wider range than is indicated in the title. Pain, of course, is always nerve pain, and there are very many nerves in the body—cranial, peripheral, visceral; hence in dealing with neuralgia and neuritis the author of necessity covers much clinical ground. Further, many paralyses are the result of nerve involvement. The reader need not, therefore, be surprised to find that such diverse conditions as dislocation of the shoulder, adhesions in joints, hiccough, myoma cutis, convulsive tic, and spondylitis are assigned a place in this compendium of neuritis.

The author indicates at the outset the loose way in which the terms are commonly employed; they are in many instances a complete misnomer. Nor is the distinction between neuritis and neuralgia always clear. Dr. Harris seeks to define neuralgia as a pain radiating beyond the limits of a local (filament or fibre) neuritis, this latter focus being in his view a constant finding. Objective proof of the reality of this terminological explanation would, we imagine, be difficult; conversely to his contention that neuritis precedes neuralgia (the latter he would like to think is always reflex), it might be held with justification that neuralgia precedes neuritis. However this may be, discrimination is less important than might appear; there are clinical methods of differentiation, but sensory neuritis is painful just as is neuralgia. All the common and many rare varieties—for example, meralgia paræsthetica or Bernhardt's syndrome—are described in succinct yet satisfying fashion; it is pleasing to find valuable information, with bibliographical references, in regard to out-of-the-way conditions such as hæmatoporphyrinuric polyneuritis, uveoparotitic paralysis, and so forth. Indeed, expecting so much from the excellence of the volume, we are the more surprised to find no apparent description of, or reference to, metatarsalgia or Morton's syndrome. This clinical condition alone, we think, has slipped through the meshes of Dr. Harris's all-embracing neuralgia net.

As for the topics that the author has made his own—viz., the treatment of cutaneous and deep neuralgias by alcoholic injection methods—they are handled in a masterly and authoritative manner. He may well be congratulated on his experience and on his success. Both practitioner and specialist should add this vade mecum to their libraries; it is full of valuable clinical and therapeutic data, and is well illustrated.

THE SURGERY OF CHILDHOOD.

By JOHN FRASER, *M.C.*, M.D., Ch.M., F.R.C.S.E., Regius Professor of Clinical Surgery, University of Edinburgh; Consulting Surgeon to the Royal Hospital for Sick Children, Edinburgh. London: Edward Arnold and Co. 1926. In two volumes. Pp. 1152. 42*s.*

OF late years no text-book of the surgery of children has appeared in this country, and this work will, therefore, be examined with keen interest. It may be said at once that Prof. Fraser has been completely successful in presenting a readable and well-balanced account of the subject. There is abundant evidence that the book is not, like so many text-books, merely a compilation. The personal touch appears often in its pages, revealing the wide experience of the author and enhancing the value of his conclusions. There is, indeed, little which calls for criticism; here and there we notice an omission for which the author may have a good excuse. For instance, decortication for old resistant empyema is not described, nor is litholapaxy given as an alternative method to suprapubic cystotomy for stone in the bladder. Sometimes new methods are described which should only be mentioned for condemnation, such as the "closed method" of treating acute appendicitis in children. The only operation for ectopia vesicæ given is the intraperitoneal one of successive transplantation of the ureters, and we are not told what to do with the exposed vesical mucosa remaining behind. We are glad to see diaphysectomy for acute osteomyelitis condemned, and also, in nearly all cases, bone-grafting for Pott's disease of the spine. There are a few misprints—for example, on line 10, p. 700, "cord" appears for "canal"; on p. 638, line 27, "caries" for "carious"; and on p. 582, line 19, "fustula" for "fistula."

The book will certainly meet with a good reception from all interested in children's surgery.

THE HISTORY OF PROTOZOOLOGY.

By F. J. COLE, D.Sc., Professor of Zoology, University College, Reading. London: University of London Press. 1926. With 1 plate. Pp. 64. 3*s.*

THE history of the progress of natural knowledge teaches us two lessons—that discovery is a process and not an event and that anyone may come across something fresh at any time. Prof. Cole's interesting lectures illustrate these points with material which is more or less familiar both to medical zoologists and to microscopists. One wonders whether Dallinger and Drysdale's description of the production of almost invisible heat-resistant "spores" by a flagellate may not possibly be more correct than recent criticism has been willing to allow; something of a similar sort has been found for some of the ultramicroscopic viruses.

A subsidy from the Publication Fund of the University has made the book very cheap, and it should be read widely.

THE CHEMISTRY OF DRUGS.

By NORMAN EVERS, B.Sc., F.I.C., Chief Chemist to Messrs. Allen and Hanburys, Ltd. London: Ernest Benn, Ltd. 1926. Pp. 247. 32*s.* 6*d.*

THE paper cover of this imposing and attractive-looking volume displays the statement that the chemical aspect of drugs has never before been dealt with in one volume, whilst the preface states that the author has endeavoured to give a description of substances used in medicine from the standpoint of pure chemistry. The reader is therefore justified in hoping for a work comparable, say, to Die Arzneimittel-synthese and may be disappointed.

The volume is divided in a logical way into two parts, the first dealing with synthetic drugs and the second with drugs of natural origin. In the first section hypnotics, antipyretics, local anæsthetics, and so forth are described. The author states in his introduction that the drugs dealt with have been chosen "either as being of established reputation, or as being of special interest to the chemist." The selection appears, however, to have been rather limited, and confined mainly to drugs well established by English firms. In the scanty space—only three and a half pages—devoted to organic compounds of arsenic, the references to the literature are inadequate, and stovarsol is not even mentioned. Antimony compounds receive one paragraph, whilst mercurial drugs are despatched in two pages. The second part of the book is devoted to drugs of natural origin. The alkaloids are treated in a slightly more respectful manner, but the account cannot be regarded as in any way complete. Drugs of animal origin also receive inadequate notice, and the section on insulin is poor. Methods are referred to so briefly that frequently their underlying principle is not made plain. The author shows undue credulity in the section on thyroid preparations; for instance, the

acetonitril test is referred to as being the last court of appeal as a test for potency.

Regarded as an expanded chemical drug catalogue, with graphic formulæ and a few details about them, this book will cause no disappointment and may, indeed, be useful. For example, the section on hypnotics will be found of value by the practitioner, and Appendix II. is really informative. It consists of a table showing the official trade names of drugs, their chemical constitution, and their main physiological action. For the production of the volume we have nothing but praise.

PRACTICAL PHOTO-MICROGRAPHY.

Second edition. By J. E. BARNARD, F.R.S., F.Inst.P., F.R.M.S., Lecturer in Microscopy, King's College, London; Director of the Department of Applied Optics, National Institute for Medical Research; and FRANK V. WELCH, F.R.M.S. London: Edward Arnold and Co. 1925. Pp. 316. 18s.

THE first edition of this work was published in 1911, yet, as the authors say, photo-micrography has not advanced so much since then as to necessitate the complete rewriting of the book. It is true that the general level of microscopes and photographic apparatus may be higher now than 15 years ago, but individual microscopes and lenses are no better to-day than they were then. The authors have, therefore, devoted themselves to the consideration of method rather than apparatus, and have produced a volume which cannot fail to be of the greatest value to those interested in this technique. Every aspect of the subject is fully dealt with, but by the exercise of a commendable sense of proportion the manual remains of reasonable size. We have looked in vain for serious omissions; possibly a comparative scale of the speed values of the commoner plates in use would be appreciated. The book is essentially practical and is written simply and clearly, so that no one should have any difficulty in following the authors' instructions. Finally, the illustrations are excellent, and the beautiful examples of what can be done with photomicrography are stimulating.

CLOUDS AND WEATHER PHENOMENA.

By C. J. P. CAVE, M.A. Cambridge: At the University Press. 1926. With 47 figures. Pp. 32. 5s.

WEATHER phenomena are being more closely observed to-day, and there are many books on meteorological subjects which contain full information on the appropriate instruments and their use and on the principles of forecasting from weather maps. But the phraseology in which to describe the changing pageant of the sky is not known to many who try to communicate observations upon what they see, and this small volume, with its accompanying illustrations, will be found useful in this direction. Another class of reader to whom a more direct appeal is being made is formed by artists of all sorts, for the small photographs illustrate a very large variety of skies, the clouds of the various sorts and shapes indicated by their names massing themselves together, falling apart or fading in very typical manner. Skies that we have all had opportunities of seeing are reproduced, but as the photographs of clouds have been taken with the intent to get as much detail as possible of the cloud structure, the illustrations are dramatic. It is cloud structure which many painters fail to render correctly, or make little attempt to render; the changes in a sky at all cloud laden and at all influenced by wind are so rapid that what may be termed the architectural make-up of the vapours must often fail to obtain recognition on canvas or paper. The photographs, as the author states, were not taken with the intent to make artistic pictures, and as far as their utility to artists is concerned they should be of great use to students of landscape in providing many significant conditions of sky under which cloud phenomena, with their endless and rapid modifications, will be found to range themselves.

CARE OF THE FEEBLE-MINDED.

The American Association for the Study of the Feeble-Minded. Proceedings and Addresses of the Forty-ninth Annual Session held at Raleigh, N.C., May, 1925. Comprising the *Journal of Psycho-Asthenics* xxx. Published by the Association. 1925. Pp. 360.

THE care of the feeble-minded has of recent years become a specialty and, like all new specialties, it has developed a literature of its own. The more the problem is investigated the more it becomes apparent that the workers are but at the beginning of their labours. At the American Conference held last summer the mental defective was discussed from all angles by workers of all kinds, and Dr. G. B. Smith's presidential address aptly urged the importance of amalgamating the modern trends in medicine, politics, economy, sociology, and law. The more strictly medical contributions include a review by Dr. H. W. Potter of the literature on the morbid anatomy of the mentally deficient brain, and a paper on the Understanding of the Feeble-Minded, by Dr. T. Haines. Dr. C. B. Davenport and Miss G. Allen conclude that the production of a Mongoloid dwarf requires the combination of three or more of a large number of favouring hereditary and environmental elements, and Dr. R. B. Bean compares the anatomy of the Mongol with that of the hypomorph white type. Dr. L. H. Bartemeier discusses psychoses in the feeble-minded, and Dr. Bramham psychiatric problems in the care of mentally defective children. In other sections Mr. B. W. Spilman reviews the difficult problem of religious training for these children, while Dr. Murdoch, in a paper on the Relation of Mental Deficiency to Morals, Religion, and Ethics, points out that virtue and vice do not depend on intelligence, and much can be done for the easily-moulded moron by religious and social institutions. Miss L. G. Galbraith and Miss M. S. Walker describe methods of organising work in classes for the mentally defective, and Dr. Gladys Ide discusses motivation in school work.

In his paper on Institutional Training of the Defective Delinquent, Dr. W. N. Thayer describes the procedure at the Napanoch State Institution, of which he is superintendent. During a fortnight's quarantine the delinquent is subjected to every possible examination and is usually found to have fallen far short of his possibilities. Any physical defect is corrected as far as possible, and an educational campaign instituted wherein manual and trade instruction is carried to the highest point possible but academic education through lower grades only. For the formation of social habits an even discipline is enforced, drilling-in the idea of obedience and the realisation of the benefits it confers. Supervision is relaxed gradually, and the delinquent is finally placed on parole in a colony and then in a suitable environment outside. The criticisms of present-day parole systems offered by Dr. Thayer are that it is preceded by inadequate preparation for freedom within the institution and is frequently tried under unsatisfactory employers, under too difficult conditions, or under inadequate supervision. Dr. H. M. Adler and Miss M. R. Worthington discuss the delinquents of Illinois and conclude that there is no correlation between crime and intelligence, and Dr. H. A. Cotton discusses the Relation of Focal Infections to Crime and Delinquency, basing his observations on the experience of the Psychiatric Clinic for Correctional Institutions in New Jersey, where the problem has been studied for seven years. He emphasises the danger of passing a child's mouth as "fit" from an inspection of the teeth; impacted third molars, even in childhood, are almost invariably infected, and are a frequent cause of backwardness or vague ill-health. X rays should also be applied to

the gastro-intestinal tract, and colon stasis is treated at this clinic by surgical methods. About 80 per cent. of their female cases suffer from menstrual disorders, mainly due to infection of the cervix. Similarly, colon bacilli and cocci are frequently found in the seminal vesicles of the male, quite apart from any venereal infection. Removal of septic foci produces a remarkable improvement in the emotionally unstable as well as in the definitely defective. Mr. G. M. Wilson discusses the part of Psychological Tests in the Diagnosis and Analysis of Mental Deficiency, reviewing critically the many different test schemes that have been devised in recent years. In discussing the Functions of a Clinical Psychologist in an Institution, Mr. Ll. N. Yepson deplores the tendency of these officials to occupy themselves entirely with academic research; they should identify themselves with the every-day life of the institution and determine for each inmate just what type of training and environment will bring the utmost possible out of him. Dr. Mary M. Wolfe discusses the Relation of Feeble-mindedness to Education, Citizenship, and Culture, and stresses the results of training the feeble-minded in public schools, particularly the inferiority complex, which is bound to develop and probably plays a significant part in defective delinquency. Dr. T. H. Haines inquires carefully into the relation between mental defect and poverty with the aid of statistics compiled by the National Committee for Mental Hygiene, and finds six times as many defectives among the poor as among school-children generally.

In all some 30 papers, mainly non-technical, are printed in this volume, and anybody who is interested in recent work among defective children will welcome their appearance in one cover.

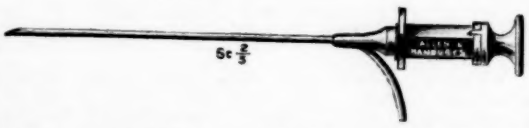
JOURNALS.

BRITISH JOURNAL OF CHILDREN'S DISEASES. Vol. XXIII. January–April.—Mr. Macleod Yearsley contributes a paper on the Development of Speech in the Normal Child based on almost daily observations of his own child for a period of over three years. He maintains that the first year is spent in methods of communication which are partly animal and partly primitive human, while the second year is devoted to the completion of a vocabulary and experiments therewith, the third year being occupied in perfecting and correcting.—In a paper on Chronic Abdominal Pain in Childhood Dr. K. U. Toverud shows that chronic constipation in some children gives rise to a picture suggesting a severe disease, recurrent abdominal pain and general malaise being the predominant symptoms. The principal cause of the condition is concentrated food which consists of readily digestible material, so that its utilisation is complete in the intestinal tract and very little or no residue is left to stimulate the intestine to peristalsis. Another cause is to be found in the bad habits of the child who is too busy playing to take time to empty his bowels. The symptoms readily disappear as soon as the child is given a diet consisting of whole wheat bread, lactic acid milk, much raw fruit, large quantities of vegetables, besides some fish and meat.—In a paper on Observations on Goitre in Childhood Dr. H. Leslie Cronk comes to the conclusion that the causes of goitre in children may be: (1) a hereditary or early acquired diminution in secretory activity of the thyroid; (2) the relative increase of weight of the body causing increased need of thyroxin for metabolism; (3) some factor which affects the tonsils in such a manner that the rise in prevalence of enlarged tonsils coincides with a diminution of goitre prevalence, and exerts such an effect on the latter that the enlarged tonsil-rate at times over-rides the effect of increased metabolism required for increased body-weight.—In a paper on Pneumothorax in Young Children, with an account of a case, Dr. Alan Moncrieff reviews the literature and points out that though many of the recently recorded cases seem to have been tuberculous in origin, tuberculosis, especially in young children, is not a common cause of pneumothorax. In his own case, which occurred in a male infant of 1 year 10 months, the favourable issue and negative Pirquet test suggested that the case was not tuberculous and that the condition was probably caused by the rupture of a subpleural emphysematous vesicle in the course of a broncho-pneumonic process in the right lung. The absence of any pus in the pleural cavity was against rupture of a subpleural abscess which is the commonly accepted cause in post-pneumonic cases.—In a paper on Palpable Arterial Coats in Children Dr. A. E. Vipond, of Montreal, states that during the past year he has met with several examples of arterial thickening in children as a familial condition and of non-syphilitic origin. In a number of cases the children were thin and undersized. The left ventricle was not hypertrophied, the blood pressure was normal, or might be slightly raised. The occurrence of nephritis was accidental. No symptoms were present, and the condition did not shorten life, so that its discovery was often only accidental.—Dr. D. J. Hishon reports a case of Measles complicated by Gangrene of the Legs, with comments by Dr. J. D. Rolleston, who has collected 11 other cases from the literature since 1782. Although gangrene of the extremities as a sequel of an acute infectious disease is usually attributed to autochthonous thrombosis due to acute arteritis, in the present case the origin of the gangrene was undoubtedly embolic, in view of a definite cardiac lesion and an infarct in the kidney found at the necropsy. The abstracts from current literature are devoted to alimentary diseases.

New Inventions.

AN IMPROVED FORM OF LUMBAR PUNCTURE NEEDLE.

ACUTELY ill and unconscious patients cannot be placed in the position most suitable for lumbar puncture. It frequently happens in such cases that, when the needle has entered the spinal canal, the cerebro-spinal fluid, instead of dropping free from the needle opening, runs back along the outside of the shaft.



It is thus difficult to collect and a quantity is lost. In the modification shown a small outlet pipe is fitted near the end of the needle. When the latter is in situ the stilette is withdrawn to just beyond the inner opening of the small outlet pipe, through which the cerebro-spinal fluid escapes. It is easily collected, and by means of the stilette the rate of flow can be regulated.

The improved needle, which has been successfully used in many cases and has proved of much practical value, is made by Messrs. Allen and Hanburys, London.

These notes are given with the approval of the Director-General, Medical Department of the Admiralty.

W. I. GERRARD,
Surg. Lieut.-Comdr., R.N.

A CENTURY OF HONORARY SERVICE.—Dr. F. R. Mallett has been presented by the committee and honorary staff with a silver salver and a gold cigarette case in recognition of the remarkable circumstance that his grandfather, his father, and himself have been honorary surgeons of Bolton Infirmary since 1826. Dr. Mallett was appointed in 1893, and Dr. R. D. Mothersole, his senior colleague on the honorary staff, described the occasion as "unprecedented in medical history."

THE LANCET.

LONDON: SATURDAY, APRIL 17, 1926.

EDUCATION IN PUBLIC HEALTH.

Sir GEORGE NEWMAN has set out recently in a Memorandum addressed to the Minister of Health the ways and means by which the public may be, and to some extent is, instructed in health matters. His Memorandum [1] shows that public health education is dual, instructional and propagandist, the former including the professorial function and the training of the future experts, the latter being the spreading to the public by qualified persons of the lessons derived from instructed experience. Both have their place. At a recent meeting of the Royal Society of Medicine Prof. E. W. HOPE invited his hearers to make a close study of the influence of the Universities upon the advancement of the public health; the first whole-time professorial chair of public health, he said, was founded at Edinburgh in 1898; long after which date Glasgow and Cardiff had followed suit, while London, he presumed, would be in a similar happy position within a short while. At the same meeting Sir W. MACPHERSON made good his claim for the Army Medical School to have had a whole-time professor of hygiene before any University could boast one, in the person of EDMUND PARKES, whose "Manual of Hygiene," published in 1865, was the earliest comprehensive work on the subject. The policy of present-day health movements is increasingly directed to educational methods with a view to the spread of sound doctrine; knowledge which remains in the possession of a few is to that extent sterile, and some of the Universities are recognising the vital importance of training those whose official duties will bring them into daily touch with the people and whose duty it will be to translate established facts for the public in a manner which will make their application comprehensible and welcome. In this discussion Sir GEORGE BUCHANAN, speaking along similar lines, appealed for closer relation between the practical hygienist and the University. Certainly much may be hoped from the training of sanitary inspectors, health visitors, and other members of municipal staffs in University schools of social science or public health. Liverpool perhaps has been more alive to this duty than any other University city, and the results may be seen in a keenness for hygiene which has done much, where certainly much was needed, and has stimulated other communities to like effort. This instructional side of public health education is regarded as its mandated territory by the Society of Medical Officers of Health.

The propagandist side of public health education presents the difficulty that what is the business of all who are able to perform it may become the business of none, or get performed by those without due ability. Sir GEORGE NEWMAN in his Memorandum defines propaganda as concerted movement for the propagation of a particular doctrine or practice, and the spirit of it, which is that of all true missionary effort, is well expressed in a recent letter from Sir OLIVER LODGE to *Nature*, which concludes: "I will not refrain from stating what I firmly conceive to be the truth, as demonstrated by clear and repeated evidence, whenever such statement seems called for. If I had any uncertainty about it I would say so, but it is madness to be false to truth—no matter what the penalty may be." Those responsible for the New Health Society, feeling the responsibilities which have been assumed by their propagandist body, will be expected to scrutinise carefully the bearing and form of their utterances. In the *Medical Officer* of March 27th the honorary medical secretary of the New Health Society defined the truth which the Society exists to impress—namely, that "some of the influences which have come into play with civilisation, such as that of the unfavourable change in the habits of food with the resultant extra intestinal disease and faulty nutrition can be best countered by a return, in some measure, to the habits of food and bowel evacuation of primitive man"; and he adds, "this teaching is based on the unassailable excellence of scientific work of the last 20 years as to the intimate connexion between diet, constipation, disease of the gastro-intestinal tract and the resistance of the body to disease." Throughout the third number of the Society's *Bulletin* for March, 1926, this central aim is set forth many times in different words. People are adjured to give up factory-made foods and drinks, to discard "unnatural pseudo-scientific stuff," not to consume sugar, which is "the deadest of dead foods," to eat slowly and so "do with much less food." Constipation being regarded as the curse of civilisation, "those who eat three meals daily should get rid of waste matters thrice daily," and we should return to the habit of tribesmen whose bowels act three or four times daily and whose motions are soft. Primitive man exercises his abdominal muscles by dances which involve crouching and hopping, and the *Bulletin* reiterates the need for culture of the abdomen in the modern world. Those who wish to avoid appendicitis are exhorted to "shun artificial, manipulated foods." There is no actual statement in the text of the *Bulletin* that cancer will thereby be avoided, although an advertisement has been admitted to a prominent place which states that a form of cooking utensil will "cure constipation and prevent cancer." Do the utterances of the Society, which will have much lay acceptation, conform to medical experience? And do they represent fully the objects which public health propaganda should have?

With some of the teaching to be found in the *Bulletin* all medical men will agree, but many will find that distorted values have been put upon general tenets, and some will consider that there are scientific reasons for holding contrary views. This is inconvenient when public propaganda is employed in dealing with medical questions, because the audience addressed cannot be expected to know the value of the evidence upon which the general views are founded. But supposing that the scientific information which is being placed by the New Health Society at the disposal of the public was unchallengeable, there would still remain need for an explanation of the monotony of that teaching. Faulty feeding, whose connexion with the incidence of cancer is not known to exist at all, cannot be claimed as a universal cause or excitant of all lapses from health, and it is to be hoped that the Society will direct the attention of the public to other places than the dinner-table for examples of the failure to maintain hygienic standards, with the pathological sequelæ. And with regard to that aspect of health to which as yet the New Health Society is confining

[1] Ministry of Health. Public Education in Health. Revised, 1925. H.M. Stationery Office. 6*d*.

its attention, it may be pointed out that there is room for much more scientific endeavour on the lines suggested by Sir GEORGE BUCHANAN, when advocating a firmer liaison between academic teaching and practical work in hygiene. Certain of the views put forward by the *Bulletin* would have far greater appeal to medical men and would be more satisfactory to lay audiences if research work along the usual lines were being carried on in support of this teaching. There is too much loose talk among the public in the course of which all sorts of diseases, especially malignant conditions, are stated to have their origin in all sorts of things, especially food. But there is too little public appreciation of what is meant by scientific evidence, and what methods can be taken to elicit scientific truth. It may lie in the hands of the New Health Society to do much good here by future propaganda.

THE SITUATION OF THE VOLUNTARY HOSPITALS.

DURING the last few weeks a large number of voluntary hospitals have issued their reports and held their annual meetings. The circumstances of no two hospitals are ever identical, but these reports and the speeches at the meetings at which they were adopted nevertheless show that in broad outline most of these institutions find themselves in much the same position and faced by similar problems, some of which can only be described as acute. The dominant impression left by the study of a large number of reports is that during the last few years the outlook of the hospitals upon the community and of the community upon the hospitals has entirely altered. Hospitals are no longer charities maintained to a comparatively small extent by "pious founders," but mainly by the benevolent well-to-do for the benefit of the poor. They have become remedial, and occasionally preventive, institutions kept going by a rapidly increasing proportion of the people and used by classes which, not so long ago, would have regarded the occupation of a hospital bed as a slur upon their social status. The reasons for these changes are too familiar to call for elaboration; their occurrence and the conducing factors have been noted regularly in these columns. Growing costs compelled the hospitals to cast a wide net for subscriptions; the working classes quickly realised the overwhelming advantage of acquiring at a cheap rate the right to hospital treatment; the amazing rapidity with which the scientific and research side of hospital work has grown has brought to their doors many patients who, although not weekly wage-earners, are unable to face the cost of special private treatment. The future of the hospitals has thus become everybody's problem.

Broadly speaking, the financial position of the voluntary hospitals, as disclosed by their annual reports, is fairly satisfactory, a position for which our readers have been fully prepared. As a rule they are paying their way, and a certain number have achieved surpluses sometimes astonishing in their novelty. There are still deficits, but they tend to diminish both in amount and in number. This improvement in the pecuniary situation is due mainly to the wide creation and rapid extension of contributory funds, which have not only greatly multiplied the number of supporters but provided the hospitals with a steady and increasing income. There is solid reason to hope that as these funds become omnipresent they will obviate the necessity for the frenzied special appeals which do so little credit to our business instinct and form so woefully insecure a foundation for the cost of curative work and steady and methodical scientific research. To secure this consummation, however, these funds will have to be extended very widely, since it is certain that expenditure will increase heavily as the hospitals become more and more centres of research and laboratory investigation. and approximate more closely to the ideal of prevention. Many years must elapse before we can save on the cost of cure enough to pay for the cost of prevention. Another principal reason for the present and future growth of expenditure is the necessity which faces the majority of hospitals for large extensions. On every hand there is a cry for more wards, larger out-patients' departments, more scientific apparatus and therapeutic appliances, more convalescent homes. Patients, both in and out, have increased with extraordinary rapidity of late. Some of the great hospitals see their out-patients growing by thousands, while lists of patients waiting for beds which, even after the careful sifting which they admittedly require, reach pitiful dimensions. There is nothing more harrowing to the medical staff of a hospital than the knowledge that delay in admission means that slight cases become serious and serious ones incurable. Another tax which has lately been put upon already overstrained resources comes from the alarming increase in traffic accidents.[1] Last year, according to a Home Office return just issued, there were more than 115,000 such accidents, 3525 of which were fatal. Urgent casualties cannot be relegated to a waiting list, and by no means all of these motor mischances can be dealt with in the out-patients' department.

Necessary extensions are, then, the most serious problem with which the voluntary hospitals at present have to deal. Government help has been refused, possibly unwisely, and very few institutions can hope to save anything tangible from their current revenue. For the cost of extensions the hospitals have to look to special efforts, to exceptional individual generosity, or to large legacies, and probably the special effort is at present the most fruitful source. The help that might conceivably be obtained by a change in the Poor-law which altered the status of the "infirmaries" run by the guardians is highly uncertain, and in the main it is clear that the voluntary hospitals will have to work out their own salvation. Their board rooms are full of courage and confidence, but the burden will have to be shouldered

[1] In the House of Commons just before the Easter recess Sir Herbert Nield asked the Prime Minister whether, having regard to the heavy charge which fell upon the voluntary hospitals consequent on the reception and treatment of persons injured in road accidents, who in many cases were non-resident, and whose injuries were frequently caused by reckless driving or at excessive speed, and to the fact that the injured persons were generally unable to make any contribution towards the cost of their treatment, he would consider the desirability of amending the law by enabling the court, upon a conviction of an offender, to include in the order the payment of a fixed sum, by way of contribution, to the hospital or authorise the payment out of the fines levied by way of penalty for motor offences a lump sum, or by way of percentage, to the hospital rendering aid in these cases as the court of petty or quarter sessions might direct, or to be paid out of the general fine fund of the court.

He also asked whether fines imposed upon persons convicted of reckless driving of motor-cars or at an excessive speed amounted to a considerable sum; and, having regard to the fact that during the year 1925 the sum so levied by the Ealing section of the Brentford petty sessional bench and actually recovered for fines amounted to £783, and that during the same period the King Edward Memorial Hospital, Ealing, expended approximately £1190 in treating patients injured in motor accidents within the borough over and above contributions received from patients, and that such results were probably the same in other places, he could see his way to promote legislation which would authorise the making of grants to hospitals treating such patients out of the fine fund of the courts imposing such fines.

Colonel W. Ashley (Minister of Transport) replied: I will bear in mind the suggestion, but I cannot hold out any hope that it will be possible to introduce legislation to give effect to it.

by the entire community, which needs to learn more completely than it has at present that the hospital problem is a national one and can only be solved by the nation acting as a huge sodality and for its own exceeding great advantage. The need for extensions is sharpened by the desirability, generally felt, of making some provision for patients who can pay reasonably for their maintenance and their medical care and a moderate surgeon's fee. There are no very brilliant prospects of profit in this direction when the cost of providing accommodation is allowed for, but there is a clear advantage in a small proportion of patients who not only cost nothing, but make some contribution to the funds. Already there is a notable increase in payments received from ordinary patients, though it is generally observed that the gratitude of persons cured of the hurts received in motor accidents rarely takes a tangible form, even when they recover compensation from insurance companies.

The past year was remarkable for the extent to which "wireless" was introduced into hospitals. Very many of them now possess "radio," and within a comparatively short time this diversion will probably be enjoyed by all of them. We note with satisfaction the dying struggles of the antiquated and thoroughly objectionable "ticket system." A minority of benevolent but old-fashioned people cling to it still, but it is doomed, and few tears will be shed over its tomb. It belongs to the old conception of the hospital when a few guineas bought a certain amount of patronage, and the hunt for tickets was often an exasperating preliminary to admission. To sum up the experience of the past year it may be said that the outstanding fact on the financial side is the rapid growth in contributory schemes and in their product. They are now the biggest source of revenue, and during the last five years have increased on the average 10 per cent. every year. On the scientific side we see an equally rapid growth in the use of X ray and sunlight treatment, and electromedical helps generally. There has also been an exceedingly promising quickening of interest in orthopædics, the far-reaching importance of which is beginning to be more definitely understood by the general public. There is reason to be thankful for anything which focuses lay attention upon the grave fact that a vast proportion of the physical suffering of mankind is the direct result of the neglect of disease and deformity in the early stages.

THE USE OF PSYCHOTHERAPY.

WE commented a fortnight ago on the prominence assigned to psychotherapy by Dr. FARQUHAR BUZZARD in his recent Lettsomian lectures, pointing out that, if psychotherapy is as indispensable as it is claimed to be, the principles governing its employment should be far more widely recognised and systematised than they are. It was further suggested that this lack of recognition and of system could be traced to a profound disagreement among psychotherapists themselves as to the choice of methods and of patients, and also to an absence of information regarding the results obtained by recourse to these various procedures. With respect to the latter the annual report[1] of the Medical Director of the Cassel Hospital for Nervous Disorders contains a great deal of valuable and practical information on what is admittedly a difficult subject expressed in language which all can understand.

[1] Obtainable from the Medical Director, Cassel Hospital for Functional Nervous Disorders, Swaylands, Penshurst, Kent.

Two aspects of the report call for consideration. In the first place Dr. T. A. ROSS has set out to demonstrate that "illnesses or states of discomfort of purely psychogenetic origin exist, which have no ætiological relations with the body, and which can be abolished by a change of mental orientation." To some it might appear unnecessary to labour this point, for common sense, embodying as it does the wisdom of the ages, surely teaches us that abnormal states of mind may and do arise independently of any physical disorder. Dr. ROSS, however, very properly points out that while no one would deny that psychical symptoms may be directly dependent on toxic or chemical causes, there have recently been, especially in this country, clear indications of a return to the belief that physical conditions are usually at the bottom of all mental disorders, including that type of mental disturbance most commonly found in patients admitted to the Cassel Hospital—namely, anxiety states.

By the aid of case material the psychogenetic origin of symptoms is lucidly explained, beginning with quite simple examples and proceeding to more complicated ones. A study of these cases would seem to provide convincing demonstration of the correctness of the hypothesis which it is the object to prove. The fact that the hypothesis is independent of phenomenal reality is immaterial, provided that, as Dr. BERNARD HART has recently pointed out in his Goulstonian lectures, it explains the observed facts, is not contradicted by other facts, and is capable of verification by repeated reference to experience and experiment. It must also be borne in mind that in many of the patients the psychogenetic nature of their symptoms had not been recognised prior to their admission, while most of them had been previously submitted to physical treatment which had failed to cure them and in many cases had made them worse. From the practical point of view the crux of the matter would seem to lie in the necessity of recognising that symptoms may arise independently of bodily disease, for it is obvious that unless their psychogenetic origin is admitted, the question of dealing with them along psychotherapeutic lines can never arise. The report also refers to the fact that the symptoms complained of are, many of them, or more properly the majority of them, physical in character. This is a matter of some significance, for it is perhaps natural to assume, and the general tendency of medical teaching has always tended to support the assumption, that all bodily disturbances have a physical basis. It is much easier for the student of medicine to believe that indigestion and palpitation are the result of some subtle changes in the gastric mucosa and myocardium respectively than to be convinced that they may be the bodily expressions of some disordered state of mind. Moreover, once such convictions have become generally established many chapters of our medical text-books will have to be rewritten. In this connexion it is worth recalling that psychopathology has mainly grown from the investigation of hysteria in which the phenomena are in great part physical in their manifestations.

The second aspect of the report concerns methods of treatment and the results of treatment. Dr. ROSS gives concrete examples of the several methods of psychotherapeutic approach. Where the nature of the anxiety is recognised by the patient or is revealed by the history of the illness, evaluation of the symptoms is often sufficient to secure the necessary relief, but the explanation given by the physician must fit the history and be positive in character, that is to say, the symptoms must be accounted for "in a fashion which really makes their presence a thing that might have

been expected." This procedure, which is relatively easy, is suitable for those simpler forms of neurosis in which emotional reactions produced by anxieties and conflicts have been misinterpreted by the patient and regarded as signs of physical disease. The positive explanation, it may be noted, is the very antithesis of that which is too often given—namely, that "there is nothing the matter." In certain cases where the anxiety or conflict is not on the surface Dr. Ross considers that the physician is justified in making speculative inferences as to its nature, although he admits that this method is capable of becoming "a haphazard and dangerous procedure." But in those patients who are quite unaware of the causation of their symptoms, and where no grounds exist for speculative inference, recourse must be had to the method of free association or to hypnosis, and a very interesting example is given where these two methods were employed together successfully. Of the 114 patients suffering from one or other of the psychoneuroses, who were discharged during 1924, 86 were well or much improved, and although out of these 86 there were some "whose difficulties seemed to depend on complexes which were unconscious in the Freudian sense, complexes which when they were discovered struck the patients themselves as very important," the majority were probably assisted to recovery by simple explanations and the discussion of difficulties of which they were for the most part aware. Herein seems to lie a feature of great practical significance, especially when taken in conjunction with the good reports obtained from patients discharged in previous years, reports which pay tribute to the efficacy of the treatment and to the value of an efficient follow-up system. For it may fairly be submitted that the type of case which is treated successfully at the Cassel Hospital is in no way peculiar to that hospital, but abounds in every class of practice. Of the total admissions 75 per cent. suffered from one or other of the psychoneuroses, and of these a large majority were relieved or cured by methods which are sufficiently simple and straightforward as to be within the reach of any doctor who wishes to make use of them. It is often stated that these methods take more time than the general practitioner can afford, but this is largely a fallacy, for very many cases take up no more time than is spent over many physical illnesses. What, however, does take time is the initial physical examination which cannot be too thorough, and the taking of the history which cannot be too detailed. Unfortunately it can hardly be denied that the prime importance of accurate history-taking is not sufficiently emphasised in our medical schools, although in all disorders, both of mind and body, it ranks easily first as a method of investigation. It is not enough for the patient to enumerate his or her symptoms; the physician must acquaint himself with the order in which they appeared and with the circumstances in which they appeared, and it is the latter especially which so often provides the clue to some emotional stress of the existence of which the patient may be aware, but the effects of which he has ignored or misinterpreted. Without an accurate history no diagnosis is possible, and diagnosis is as essential a precursor of rational therapy in disorders of the mind as it is in disorders of the body.

The report briefly discusses the Freudian view that for the purpose of curing a psychoneurosis it is necessary in every case to go to the ultimate cause. Dr. Ross's experience is to the effect that this view is not necessarily true, for the reason, if we have not misunderstood him, that he so often finds that the anxiety is within the patient's consciousness and deeper excavations are therefore not indicated. Where, however, the problem is obscure he raises no objection to the method of free association or of talking at large, provided due care is taken "not to strain associations or to force them upon the patients," a precaution which seems to us eminently sound. From the next report we hope to learn more as to which types of neurosis are particularly amenable to treatment and which are most resistant. Consideration of this valuable document compels us to revert to the plea we put forward a short time ago for the greater systematisation of psychotherapeutic principles. It would be well not to forget that, as Dr. W. RIVERS insisted shortly before he died, psychology is a new science, and that owing to premature and over-ambitious attempts to apply its supposed discoveries to practical problems, while the basis upon which they rest is still insecure, there is a serious danger that the science itself may fall into discredit, and that instead of its study receiving almost universal interest it may even become a matter of ridicule. The psychotherapist who claims that there is only one method of treatment, be it hypnosis or auto-suggestion, for every kind of mental illness, is no more and no less ridiculous than the osteopath who claims to cure all bodily ailments by manipulation of the spine, or the physician who prescribes digitalis indiscriminately in all affections of the heart. The application of psychological principles to clinical medicine must be carried out with caution and sobriety, and it is ardently to be hoped that the medical profession will have the good sense to turn a deaf ear to preposterous claims, and will resist the temptation of accepting wholesale attractive hypotheses, which while containing some measure of truth, do not contain the whole truth and nothing but the truth.

INTERNATIONAL SURGICAL CONGRESS AT ROME.

THE Seventh International Surgical Congress, which has just concluded its sessions at Rome under the presidency of Prof. Giordano, of Venice, was attended by more than 500 surgeons from many European countries and the United States of America. The principal subjects set down for discussion were: (1) Radiotherapy of uterine cancer; (2) Abscess of the liver; (3) Treatment of surgical tumours; (4) Surgery of the spleen; and (5) Remote results of Jacksonian epilepsy, each of which led to lively discussion. The opening of the Congress was marred, as everyone knows, by a deplorable attempt upon the life of Signor Mussolini, who had been present at the inaugural session. By a fortunate chance the Premier had just turned his head to respond to the salutation of the crowd at the moment when the firearm was discharged, and the bullet only caused a shallow wound of the lower surface of the nose. Members of the Congress were witness of the singular courage shown by Signor Mussolini during this ordeal, his first words being an encouragement to those around him to show an example of perfect calm. First aid was rendered by the President of the Congress and Prof. Bastianelli. Signor Cremonese, the Governor of Rome, in a message to the Congress, declared that under the Fascist régime Rome was more than ever desirous to contribute her part to science. The Premier took as his text the original significance of the word surgeon—that is to say, handworker, going on to speak of the surgeon's task as something far more than handiwork, demanding in fact the highest gifts of intelligence and character.

Annotations.

"Ne quid nimis."

THE OPTICAL CONVENTION.

THE Optical Convention closes at the end of this week, and judging by precedent it will probably be many years before anything of the kind will be held again in this country. We regret this, for the knowledge disseminated is valuable. Those who have visited its exhibition at the Imperial College of Science, South Kensington, will have realised afresh how vital is the science and industry there represented. It is the handmaid of myriad arts and occupations, and it is a servant so efficient that people easily forget the complicated technique which underlies its service. During the greater part of last century, as the Prime Minister pointed out in his opening address on April 12th, British work in the optical industry was predominant, and it was not until the end of the century that it was first threatened, and finally almost overwhelmed, by foreign competition. The grave difficulties of the war decided the Government to safeguard the industry, and a substantial grant was also given to the British Scientific Instrument Research Association. This measure of protection had its critics; but the case for subsidising the optical trade was more convincing than some others, for the competition of countries with depreciated exchanges would have made it difficult, if not impossible, to re-start an industry such as the manufacture of optical glass—which had almost died out in this country—without assistance of some kind from the State. At South Kensington there is an interesting display of the optical glass now being produced of which there are over 100 varieties. This is one of frequent exhibits of general interest, but there are also many which are likely to interest medical men especially. Innumerable kinds of ophthalmoscope are shown, and there are many beautiful drawings of abnormal conditions of the fundus. The Refraction Hospital and many private firms exhibit in profusion the latest apparatus for the practice of ophthalmology, and specialists will do well to avail themselves of the opportunity for comparison afforded. Needless to say, there is an excellent display of microscopes, and not the least interesting is the collection of early models, many of which were used by famous scientists of the seventeenth and eighteenth centuries. Demonstrations of some of the more celebrated experiments in the history of optics are given. To mention the other sections of the exhibition would savour of the catalogue; all that is needed is to say that nothing seems to be missing to make it complete within the wide bounds laid down. The visitor may be tempted at first to spend his time in seeing the sideshows and in cultivating his capacity for being deluded. But he will soon find that the rest of the exhibition is even more entertaining than the entertainments, besides being instructive even to the ignorant.

IONIC MEDICATION IN DENTISTRY.

THE theory underlying ionic medication was strongly attacked some years ago by Dr. David Campbell,[1] who claimed that the amount of any drug which could be introduced was so negligible that the method offered no advantage over administration of the same drug by the mouth, by inunction, or by hypodermic injection. He also stated that there was no evidence of local concentration or deep penetration, and that any good effects were due to the electric current rather than to the drugs used in connexion with it. Mr. Owen Morphy, in a thoughtful paper which recently appeared in the *British Dental Journal*,[2] carefully analyses Dr. Campbell's criticism, and contends that ionic medication is both theoretically and practically justified as a method of securing a greater penetration of drugs than is possible by other forms of application. He discusses its use, especially from the dentist's point of view, and in dentistry the conditions are in some ways special. As he points out, inunction and hypodermic medication are not possible in the treatment of pyorrhœa or sepsis of root canals, the two chief dental conditions in which ionic medication is employed. He lays stress on the fact that the ionised drug is in a nascent form, and there is strong evidence, he says, that various drugs are more potent in this form. Dr. Campbell carried out a series of experiments to show that when a drug is introduced into the body by ionic medication, it passes so rapidly through the tissues, as estimated by its appearance in the urine, that any great amount of local concentration is unlikely. He also considered that its rapid appearance in distant parts of the body was an argument against any deep local penetration, since the ions give up their function of carrying the current almost immediately they pass the skin. But even in Dr. Campbell's figures for iodine there was a margin of 20 to 40 per cent. of iodine unaccounted for; and Mr. Morphy suggests that, conceivably, this represents in part the iodine which has been introduced into the tissue cells and temporarily fixed there. It is noteworthy that in Dr. Campbell's experiments the amount of iodine present in the urine increased with the strength of the current employed. In dentistry only weak currents are used in ionic medication. While it may be granted that the actual amount of iodine ions liberated is small when used in root canal work or in the treatment of pyorrhœa, Mr. Morphy rightly says that even a small amount of so powerful a drug as nascent iodine may not be negligible when introduced into the narrow space around the apex of a tooth or into the narrow zone of tissue in a pyorrhœa pocket. The only alternative to ionic medication, moreover, is the local application of a drug under conditions which do not readily favour its penetration to the actual area of infection. Apart from the particular conditions existing in the mouth, Mr. Morphy questions whether hypodermic injection gives as much local concentration as ionisation. In local analgesia, in order to obtain a local concentration of the anæsthetic, it is necessary to add adrenalin to prevent a too rapid diffusion which would defeat the ends for which the anæsthetic is given. An argument advanced against deep penetration is that, according to experiment, ions cannot be driven through the skin to a greater depth than the subcutaneous tissues, owing to the resistance of the skin. Mr. Morphy concedes this, but points out that in pyorrhœa the pocket has largely lost the normal lining of epithelium present in the gingival trough. Similarly, in root canal treatment the apical tissues have no epithelial lining; there is no cutaneous resistance to limit the penetration of ions into the submucous tissues. He reproduces two microphotographs taken by Mr. E. Sturridge showing very definitely the amount of penetration possible through the gum of a living animal. The argument that the good effects of ionisation are due to increased generation of heat does not really affect the use of ionic medication in dentistry. The simple ways of applying heat used in other parts of the body are generally not appropriate to the treatment of the dental tissues, and although it is quite possible that some of the good results of ionic medication may be due to heat, this fact in no way detracts from the value of the treatment for dental conditions. Again, the argument that ionic medication acts by producing hyperæmia, while affecting the validity of the underlying theory of its action, is no argument against its practice, especially in the treatment of pyorrhœa or septic root canals. As Mr. Morphy points out, such views only bring ionic medication closer into line with high frequency or ultra-violet radiation in the treatment of dental disease. He lays a good deal of stress on the coagulating power of zinc ions. In root canal therapy this tends to promote dryness of the apical region which is so difficult of access. The coagulation, he suggests, may be beneficial in the treatment of

[1] Brit. Med. Jour., 1923, i., 409.
[2] Brit. Dent. Jour., March 15th, 1926.

pyorrhœa by sealing and sterilising the suppurating surface of a pyorrhœa pocket. On clinical grounds there seems little doubt that ionic medication has a beneficial effect in the treatment of pyorrhœa, especially in the early stages of the disease. Pyorrhœa is so notoriously difficult to treat that it is far from easy to evaluate the many forms of treatment employed. Ionic medication will not work wonders, but used judiciously in combination with other methods it has a definite place in dental therapeutics. Its exact mode of action remains uncertain, but Mr. Morphy's views are reassuring to those who use this form of treatment in dental conditions, and consider it both legitimate and valuable. That part of its action may be due to increased heat and a local hyperæmia may well be true; but, if so, this is an added argument for its use.

FLYING DOCTORS.

THE distinguished specialist who flies once in a while to a rich, importunate, and distant patient is already familiar to most of us. Less is known of the systematic use of aeroplanes for the sick and injured, although the ambulance aeroplane has already done good service. It was first used by the French Army in Morocco under Marshal Lyautey. In May, 1921, 20 aeroplanes, each carrying two stretchers, were sent to Morocco, and proved so successful in evacuating the wounded that since then many more have been employed. The Swedish Red Cross has done pioneer work in using an ambulance aeroplane to transport the sick from its sparsely populated northern areas to the nearest hospital, often over 100 miles distant. In 1923 it applied to the Government for a subsidy to purchase an aeroplane for this purpose, and the Government agreed to share the expense of purchase. The machine is piloted by military airmen, and the Red Cross defrays the running expenses. Many lives have been saved by this means. One patient, suffering from hæmorrhage and living in a very isolated part, was transported in an hour and a half to the nearest hospital at Boden, whither the journey by sledge would have taken at least 20 hours. Once the idea had taken root its corollary became evident. If an aeroplane can take the patient to the doctor it can also take the doctor to the patient. This second life-saving use for the aeroplane is particularly applicable to Australia, with its average population density of only 1·83 persons per square mile, and in the April number of *The World's Health* H. C. Loeffler tells how the aeroplane is helping to solve the problem of providing medical aid to distant settlers in that country. A single doctor at Darwin has a practice extending over an area ten times that of Great Britain, but the condition of roads and absence of bridges no longer prevent him from reaching patients far off in the Bush. The Australian Inland Mission, which has already been instrumental in supplying nursing homes to the "Outer Bush," is now proposing to extend its activities to supplying doctors by aeroplane. It has therefore mapped the central part of the continent into circular districts, each with a radius of 200 miles which could be covered by flying doctors when necessary. As a first step, the Mission proposes to develop a wireless service and to educate bushmen in its use. Meanwhile the aeroplane plan has been submitted to the National Commission on Health, and it is hoped that it will meet with this body's approval. The plan includes utilisation of the regular mail aeroplane services to furnish personnel and equipment, under contract, for carrying these flying doctors.

In England communications are so rapid and distances so short that little use has been made of aeroplanes for medical purposes in civil life; but in the United States, if ordinary means of transport fail, the Red Cross can call on the aeroplanes of the Army, the Navy, and the Postal Services to send help to the victims of distant railway accidents, mine explosions, and epidemics. Outbreaks of diphtheria in remote districts have been dealt with effectually by sending doctors, nurses, and serum in a few hours instead of days. Aviation has also helped in the prevention of disease; for in Louisiana aeroplanes have been used to destroy mosquito larvæ by spreading Paris green over the surface of large lakes. All over the world there are rescues and reliefs recorded which recall adventures told by writers in boys' books which seemed fantastic two or three decades ago. In Switzerland an aviator dropped food down to a party cut off on a mountain side; in Sweden some fishermen were saved from starving on an island when their communications were cut off by the breaking of an ice bridge; in Nigeria the wife of a British official was bitten by a mad dog and—by courtesy of the Governor of French West Africa, who sent her an aeroplane—was transported 1300 miles to the Pasteur Institute at Dakar, which she could not otherwise have reached for a month. The aeroplane, it is evident, has its record of salvation as well as of destruction, and in the face of so rapid an advance it is not surprising to learn that in Columbia (South America) a hospital is being built with a flat roof on which, it is hoped, the regular air ambulances will alight with their cargo.

ARSENIC IN APPLES.

AT the end of last year several Hampstead trades men were prosecuted for selling Jonathan apples which contained sufficient arsenic to have given rise to complaint of illness on the part of some who had eaten freely of them, and it is now stated on behalf of retail fruiterers that the public are to some extent neglecting apples and purchasing other fruits instead. This would be unfortunate, for, as we pointed out in commenting on the Hampstead prosecutions, the apple is a delightful and important article of food, and there is a large trade in this fruit between this country and America. The *Literary Digest* of New York for Feb. 20th reproduces our annotation of Dec. 19th, 1925 (p. 1295) substantially in full, and this has led Mr. J. H. Merrill, Ph.D., in charge of fruit insect investigation at the Kansas State Agricultural College, to protest in a letter to the Editor of the *Digest* against what he describes as the most ill-informed article he has ever read in any publication, adding, "the ignorance displayed in it hits at the very foundation of one of the great industries of the country, that is, fruit and vegetable growing." Dr. Merrill admits that "some physician may have found arsenic in apples," but he asks us to take into account the number of people that have eaten apples from sprayed trees without being injured in the least. "When you consider how many of them are still living," he writes, "you will admit that the mortality rate from eating arsenically-treated apples is remarkably low." We can agree with Dr. Merrill that arsenical poisoning from consuming apples may be uncommon, without sharing his view that the event is unimportant when it does occur. It has occurred precisely as we said, and we are glad to have drawn attention to the occurrence. The material part of Dr. Merrill's letter, however, is his statement that the arsenic found in apples comes from the soil in which they are grown rather than from the spraying. This fact, he says, was brought out at a meeting of the American Association of Economic Entomologists held in Boston in December, 1910, where it was shown that when apple-trees are grown in soil which contains arsenic, the arsenic may be recovered from the wood of the tree and the fruit. This possible provenance of the arsenic found on analysis deserves investigation, but the information is not new. A certain amount of evidence has been available in this country for more than 20 years. Experiments were conducted at the Woburn Experimental Farm in 1901 by Mr. J. A. Voelcker, Ph.D., on behalf of the Royal Commission on Arsenical Poisoning, to see whether ordinary farm crops took up arsenic either from manures in which it might occur or when arsenic was added direct to the soil. The work was

conducted on barley and on swedes, and Dr. Voelcker found [1] that arsenic did not enter into the matured grain of the corn crop nor into the bulb of the root crop, although it might be found in the green leaves of the swedes and in the green stalks of the corn crop if cut early. These results confirm the contention of Dr. H. E. Cox, public analyst for Hampstead, that arsenic is not natural to apples, and, as Dr. Cox remarked in an article in the *Analyst*, to which we have already drawn attention,[2] the presence of lead with arsenic in or on apples is fairly conclusive evidence as to its source. We must provisionally regard as a possibility the finding of appreciable quantities of arsenic on the peel of apples which have been sprayed with it after the blossoming period, but we hope it may be possible for the appropriate Ministries in apple-growing and exporting countries to take measures to reassure the public of the practical freedom from arsenic of apples intended to be consumed in a raw condition. The Association of Apple-growers in Nova Scotia has, we understand, appointed a committee to investigate and report.

A TUBERCULOSIS MATERNITY CLINIC.

FOR the last six years Prof. A. Couvelaire has been running a special service[3] at the Clinique Baudelocque, in Paris, for the care of pregnant women suffering from pulmonary tuberculosis, with the express object of protecting their new-born babies from maternal infection. This service is run in connexion with various antituberculosis dispensaries and with those organisations which board out the children of tuberculous parents in foster homes, according to Grancher's principles. A special pavilion at the clinic has been set apart for confinements, and each mother has a separate room. Those who are already receiving treatment for tuberculosis can continue their treatment during their lying-in, and as soon as a child is born it is separated from its mother and is put in a special ward in another pavilion. As soon as it has been established, by medical examination at the clinic, that an expectant mother is tuberculous, she is referred to one or other of the specially equipped tuberculosis dispensaries, usually the Léon Bourgeois Dispensary, where arrangements can be made at once for the ultimate boarding out of her child. When the mother comes out of hospital after her confinement, she is again referred to the dispensary for advice and treatment. The babies are removed from the hospital as soon as possible—that is, as soon as artificial feeding has been properly established and the weight curve is satisfactory. They are taken straight to their foster home in some country district, and here they stay until they are at least 4 years old. The organisation of the service has been made possible only through the competent help of a trained social worker, who obtains all the family and social histories. From November, 1921, till October, 1925, 231 infectious tuberculous cases were confined in this small annexe; 13 of them died under care, two from obstetrical complications, and 11 from tuberculosis. Of the 101 women who entered the clinic before May, 1924, and who were kept under observation during the year after their confinement, 15 died in the three months following confinement, and 23 died between the fourth and twelfth month after it, so that only 63 survived at the end of one year. Of the total of 231 cases, 40 were receiving artificial pneumothorax treatment. None of these had any complications during their confinement. The average weight of the babies born alive was slightly below the normal. Of the 223, three died from obstetrical complications at birth, two from fatal deformities, and four from congenital syphilis; five were born prematurely and survived only a short time. This left 209 survivors, a proportion very little inferior to that observed in most of the Paris lying-in hospitals. Two series of observations have been made by Prof. Couvelaire on the subsequent fate of these children. In 1923 a group of 57 babies placed in foster homes was followed up. Nineteen of them had died before the end of the first month, and one more, kept in hospital because it was delicate, had died at the end of the fourth month. Four of them were born prematurely, but the remaining 16 appeared to be healthy at birth. Out of a second group of 151 babies who showed no signs of tuberculosis, 20 died during the first month and six between the second and third. Prof. Couvelaire's conclusion is that the principal cause of mortality amongst these children is not any weakness at birth due to maternal infection, but is rather the separation and lack of breast feeding. He points out that although the number of children saved by his service is disappointingly small at present, the quality of the survivors has been much improved and many have been saved from tuberculosis.

[1] See Jour. Roy. Agricult. Soc., 1923, p. 149.
[2] THE LANCET, March 27th, p. 694.
[3] Bulletin de l'Académie de Médecine, 1926, No. 9

THE DEVELOPMENT OF PHARMACY: SIR WILLIAM GLYN-JONES.

Sir William Glyn-Jones has resigned the office of Secretary and Registrar of the Pharmaceutical Society, which he has held for the past eight years, in order to take up the position of Chairman of Council of the newly formed Proprietary Articles Trade Association of Canada, and the Dominions could have found no one more capable to reorganise the business conditions of pharmacy. He first came into public view some 30 years ago as founder of an association to put down certain abuses in the trade of patent medicines which were oppressing the best sort of retail chemists. At that time the sale of some obviously quack nostrums were used by the less scrupulous druggists to attract customers to their shops, the articles being sold at prices which yielded no profit. Consequently, dispensing chemists who did not resort to advertising methods of this kind experienced a falling off in their legitimate business. The new association put a stop to the evil by bringing manufacturers, wholesale druggists and retail chemists together, with the result that regulations were made by which no proprietary medicine, the makers of which belonged to the association, could be sold below a fixed minimum price; any retailer who violated the rules was placed on a "stop list" and prevented from obtaining further supplies of any of the "protected" articles. The economics of this arrangement are not our concern, but it is well that doctors and the public should understand their fundamental object. By bringing together the members of all sections of the drug trade, Sir William Glyn-Jones showed that what pharmacy had long been looking for—namely, an organised plan of development—had been found. Those who saw in the movement nothing but a plan for securing to chemists a profit on proprietary medicines should appreciate now that the outcome has undoubtedly been for the public benefit. Sir William Glyn-Jones may have secured his dominant position in pharmacy by reaching the hearts of men in an obvious way, but he has used that position for very worthy motives: for instance, the formation of the Chemists' Defence Association, the severance from the Pharmaceutical Society's activities of the trading interests of pharmacy, the union of the Society with the British Pharmaceutical Society, and last but by no means least the establishment of the pharmacological laboratories. We have no doubt that in Canada Sir William Glyn-Jones will further prove himself the champion of pharmacy. When Member of Parliament for Stepney he took an active part in the framing of shop hours legislation; he served his craft manfully, sometimes in opposition to the medical view, when the National Health Insurance Acts were in the making; and, as an expert on poison and pharmacy law, he influenced legislation in the Dangerous Drugs Acts. The retail pharmaceutical trade of Canada has selected for its principal executive officer a man with first-class claims for the post.

THE MEDICAL REGISTER FOR 1926.

ATTENTION has been already called in our columns[1] to certain errors which had crept into Tables (D) and (E) in the newly issued Medical Register for 1926. The pages on which these tables appear have now been reprinted and issued in corrected form to all of those to whom official copies of the Register had been sent. Table (D) as corrected is as follows:—

TABLE (D), *showing the Total Numbers, with percentages of the Whole, of Persons* (*a*) *registered in, and* (*b*) *remaining in, the three respective "Local Registers" for England, Scotland, Ireland.**

Country.	(*a*) Total number and percentage of persons registered from the beginning of registration in 1858, up to Jan. 1st, 1926.		(*b*) Number of persons now remaining in the Register, whose names are contained in the present "Medical Register" for 1926.	
	Number.	Percentage of the whole.	Number.	Percentage of the whole.
In England ..	54,192	55·13	24,842	48·01
In Scotland ..	25,741	26·18	16,349	31·60
In Ireland ..	15,061	15·32	7,604	14·70
Colonial	3,087	3·14	2,822	5·46
Foreign	229	0·23	121	0·23
Totals ..	98,310	100·00	51,738	100·00

* The "Medical Register," as formed pursuant to Section XXVII. of the Medical Act (1858), is the aggregate of the three "Local Registers."

The corrected total of persons whose names are contained in the Register for 1926—namely, 51,738—should now be carried forward to the last column of Table (E). In this table two other figures opposite the year 1925 require slight modification—namely, "Number added by Registration: Foreign," should read 9 instead of 8, and "Number added by Registration: Total," should read 2570 instead of 2569. This completes the correction of the 1926 Register, but those who possess the 1925 Register should note that Table (D) in that issue is not trustworthy, and that the total for the year in the last column of Table (E) should read 50,035. It is now possible to infer the increase in registered names during the last two years: there are 1703 more names in the 1926 than in the 1925 Register, and 1895 more names in the 1925 Register than in the 1924—a large increase compared with the decennial average of 851.

Summer Time will commence in Great Britain, Northern Ireland, the Channel Islands, and the Isle of Man next Sunday morning, April 18th, at 2 A.M., when the hands of timepieces and clocks should be advanced an hour. In France and Belgium Summer Time will commence three hours earlier, and according to the *Journal Officiel*, the legal hour should be advanced by 60 minutes at 23 o'clock on Saturday, April 17th. In both countries Summer Time will end on the night of Oct. 2nd/3rd. Summer Time in Holland will not begin until May 15th, and Spain has not yet reached a decision on the matter.

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[1] THE LANCET, March 20th, p. 613.

NATION'S HEALTH EXHIBITION AT LEICESTER.—On Thursday, May 20th, at 2.15 P.M., Colonel L. W. Harrison will give an address on the Diagnosis and Treatment of Syphilis, when a film with this title will be displayed. The film has been prepared for the medical profession on behalf of the British Social Hygiene Council, and will be exhibited in the Cinema Hall, Junior Training Halls, Aylestone-road, Leicester. We understand that this film will shortly be shown in the London district. In the same hall at 5 P.M. a conference will be held to consider what further steps can be taken to prevent congenital syphilis, when the opening address will be given by Dr. Norman Cruickshank, followed by Mr. John Adams, Dr. David Lees, Miss Cummins, and others.

Modern Technique in Treatment.

A Series of Special Articles, contributed by invitation, on the Treatment of Medical and Surgical Conditions.

CLXIX.

THE TREATMENT OF SUBSTERNAL AND PRECORDIAL PAIN.

THE name angina, from its derivation, indicates a breast pang, but in practice has come to mean a heart pain. It is important, therefore, before making a diagnosis of angina to make certain that the pain complained of is a true heart pain. The patient complaining of pain in the region of the heart, or in other parts of the body, often finds it difficult to describe the sensations which are felt. The diagnosis of angina depends in the main on the history which the patient gives. The angina syndrome has certain essential characteristics. The severe pain has a direct relationship to effort, and is only indirectly associated with the taking of food. It may have a close connexion with the emotional state and general health of the individual. The seat of the pain may be localised to one small area in the region of the heart, or may have a widespread distribution involving the chest, neck, jaw, the back, the arms, and the abdomen. It is a continuous pain and is felt in all grades of severity. There may be no signs of structural disease of the heart. In young subjects absence of these signs is exceptional, in elderly subjects frequent. The diagnosis of angina should be made with caution in all young people with structural disease, and rarely if ever when signs of disease are absent. In middle-aged and elderly subjects, particularly in men but not uncommonly in women, the diagnosis of angina will have to be made in many, if not most, instances from the history alone. If angina is understood to be a heart pain, a symptom of myocardial exhaustion—and this is the view generally held, at least in this country—then it follows that a healthy heart muscle can give rise to pain, anginal in character and distribution, when it is called upon to carry a very heavy load. A severe and prolonged exercise can provoke such a pain in a heart that is in no way damaged. The subject of this exercise, if he is in good condition, is less likely to complain of precordial pain or discomfort than another who is in poor condition. An athlete wins a race and feels no pain, but if on another day he is septic half the effort may produce pain of an anginal character. When the myocardium has been damaged by disease, pain may be provoked by severe physical exertion or by the slightest effort, or it may be felt with the patient at rest. Just as some patients complain of breathlessness only when walking up a steep incline, others when walking on the level, or when at rest, so also can patients with angina be graded. The effort required to produce pain should be the index of the degree of myocardial exhaustion. Pain that is felt at rest is therefore comparable with breathlessness at rest, as a symptom of heart failure, but it belongs to a different class. The ease with which pain is produced should be the guide in forecasting the course of the disease. In the same way that breathlessness on exertion may not be due to myocardial disease but to phthisis or some other cause, so also may we expect to find patients with a heart pain due to causes other than myocardial disease.

Differential Diagnosis.

The first object in examining a patient with pain in the substernal area should be to determine whether the pain is due to myocardial disease alone (primary angina), and if so, how far the disease has progressed.

Signs of increase in the size of the heart, with or without valve disease, associated with pain on effort, should be an aid in arriving at a decision in many cases. There will be others without any enlargement of the heart, and with no valve disease; in these myocardial disease may be the cause of the pain. Before this diagnosis has been made, disease in other parts of the body should be excluded. Structural changes capable of undermining the health may cause cardiac pain apart from disease of the heart muscle itself. This is termed secondary angina. A third group of patients with substernal or precordial pain have no signs of structural disease of the heart or any other part of the body. They are classed as neurasthenics. It is a condition most often met with in women, but it may occur in men. In these the diagnosis is made from the absence of structural disease, and from the presence of other symptoms of neurasthenia. Hyperæsthesia over the pain area is more common in this type of case than in primary angina.

If at the end of the examination the patient cannot be placed in any one of the three groups—primary angina, secondary angina, or neurasthenia—then the pain is generally not cardiac at all, but can be accounted for by structural changes or functional disturbance in some organ other than the heart. In some the seat of the trouble lies in the gastro-intestinal tract, perhaps a gastric ulcer or gall-stones; in others the lungs or the pleuræ may be responsible; in not a few cases the genito-urinary tract will be the offending system, with renal colic simulating angina.

Appropriate Therapy.

The treatment of primary angina is that of heart failure. The patient must live within the limits of his exercise tolerance. Those activities, physical or mental, likely to provoke pain must be avoided. In a word, the basis of the treatment in this type of patient is the management of his daily life; a sufficient amount of exercise and no more—all that he can do comfortably without pain. He must be guided therefore in his choice of a suitable occupation, one that does not exhaust or unduly tire the damaged myocardium. The more advanced the disease and the greater the degree of heart failure the more restricted will be the field of cardiac response to effort. Some patients will be complete invalids and bed-ridden; others can do no physical work and are semi-invalids in their daily life; many can over many years do half-time work, and there will be some whose activities are only restricted to the extent of avoiding excesses. The diet should be an easily digested one, erring on the side of low caloric values; small meals slowly eaten, and well masticated, and taken with a minimum of fluid. It is important to rest after meals, for pain is easily provoked at this time. The general laws of hygiene should be rigidly obeyed. Oral sepsis, or sepsis elsewhere, should be removed. These patients do not tolerate cold winds or exposure to dampness. Sleep should be aided by suitable sedatives (bromides and chloral) if there is a tendency to insomnia.

When the anginal attack is severe and persists with the patient at rest amyl nitrite may relieve the pain. Morphia may be required to make the patient comfortable. This drug is well tolerated, and can be given in large doses and repeated. Chloroform inhalations alone relieve some patients of their agonising pain, especially when the anginal attack is caused by thrombosis or embolus in coronary vessels Sodium nitrite gr. 1, slowly dissolved in the mouth a quarter of an hour before beginning such exercise as walking, may prevent the onset of expected pain. Diuretin given in doses of gr. 10 over a prolonged period is a useful drug. If the patient is of a nervous type, it will be found helpful to add pot. bromide gr. 10 or 15 to the diuretin, and give it in a mixture t.d.s. for a month or longer. Pot. iodide, gr. 10, with pot. bromide, gr. 10, can be given, perhaps with some relief to the patient. In the hypertension cases the iodides are supposed to give the best results. There is no pharmacological evidence to support this view.

With a history of syphilis, or if signs of this disease are present, the treatment should include the usual mercurial treatment with potassium iodide in gr. 10 doses, over a prolonged period. Each year a course of six or eight weekly intravenous injections of N.A.B. 0·6 g. should be given. Diathermy, three treatments a week over a period of a month, is helpful in some cases.

Surgical Treatment.—There is no sound reasoning to support the surgical treatment of angina, but there is some evidence that benefit in primary angina has followed the Jonnesco operation of cervical sympathectomy. The results obtained in Vienna by Höfer from cutting the depressor fibres of the vagus need confirmation before this operation can be recommended. Danielopolu has described a modified Jonnesco and Höfer operation the results of which also await confirmation.

Secondary Angina.—Here we must rely on removing the primary cause of the disease. The body should be explored for structural disease, sepsis, or some functional derangement; treatment should depend upon the results of this examination. It will also be found necessary for the relief of the pain to employ the nitrites, diuretin, bromides, counter-irritants, and diathermy as in primary angina. It is important, for its psychological effect on the patient, to emphasise the secondary nature of the heart affection.

Neurasthenic Cases.—It is important to stress the symptoms which can be explained on other grounds than those of cardiac disease, and to avoid emphasising such symptoms as are cardiac in origin. In this way the attention of the patient can be deflected from the heart. If the symptoms can be attributed to the stomach the treatment then becomes one of diet, carminative mixtures, and a judicious use of sedatives. Many of the drugs recommended for the treatment of primary angina can be usefully given in cases of angina of this type.

THOMAS F. COTTON, M.D., C.M. McGill, M.R.C.P. Lond.,
Physician to Out-patients, National Heart Hospital; Consulting Cardiologist to the Ministry of Pensions, &c.

The Services.

ROYAL NAVAL MEDICAL SERVICE.

Surg. Comdr. A. H. S. Richardson is placed on the Retd. List with the rank of Surg. Capt.

Surg. Lt.-Comdrs. to be Surg. Comdrs.: R. F. Quinton, M. J. Aitken, J. A. Maxwell, M. S. Moore, W. G. Thwaytes, C. E. Greeson, W. F. Beattie, H. W. Fitzroy-Williams, F. E. Fitzmaurice, T. J. O'Riordan, J. C. Kelly, and J. M. Horan.

ROYAL ARMY MEDICAL CORPS.

Maj. G. A. D. Harvey to be Asst. Dir. of Hygiene.

Maj. C. M. Drew to be Deputy Asst. Dir.-Genl., vice Col. T. C. Mackenzie, retd. pay (Res. of Off.).

Temp. Maj. P. St. J. Wilkinson relinquishes his commn. and retains the rank of Maj.

Capt. J. H. Baird is restored to the establishment.

Temp. Capt. D. A. Chalmers relinquishes his commn. and retains the rank of Capt.

de Lisle Carey and P. Weiner to be temp. Lt.

MILITIA.

Capt. T. Warrington to be Maj.

TERRITORIAL FORCE.

Capt. W. George to be Maj.

Lt. M. H. Summers to be Capt.

ROYAL AIR FORCE.

N. P. Henderson to be Flying Officer, No. 600 (City of London) Bombing Squadron.

Special Articles.

AN ATTEMPT TO PROVIDE A STANDARD DEATH-RATE FOR BRITISH MERCHANT SEAMEN.

BY FLEET SURGEON W. E. HOME.

PART I.

THE President of the Board of Trade has told us (Hansard, April 9th, 1925) that a death-rate for merchant seamen cannot be prepared, and what he said was lamentably true. Still, an approximation may be made, and it is worth attempting, for it will show how much greater are the sailors' risks than are those of men in other callings, risks both of accident and disease, and if this sinks into the public conscience a planned attempt to reduce them may be set on foot. A wise critic, writing on this subject, suggested that a death-rate in regard to one calling was apt to mislead, being so little comparable with those of the general population in consequence of the different age distributions. It seemed, therefore, that an attempt must be made to get out a standard death-rate for merchant seamen before people would pay heedful attention.

And, indeed, it may seem absurd to set out to find even an approximate standard death-rate for merchant seamen when we have no information that is accurate or generally accepted as to their number, or as to the total of the deaths attributable to the industry in any year, while even the names of the diseases from which they died are less certainly known than are those of other persons; for sailors' deaths are often named only by captains of ships, admittedly shrewd men, or by other less trustworthy observers, but who are not doctors. Still, the fact that there are these uncertainties only makes it more expedient for the question to be examined as thoroughly as possible, so that the health level of the merchant service with all its risks may be put before the profession as completely and as exactly as possible.

The last official statement professing to give a complete account of the death-rates of "occupied" merchant seamen is in Part II. of the Supplement to the Sixty-fifth Report of the Registrar-General (Command Paper 2619 of 1908), a pendant to his report on the 1901 census. It was published in 1908, and concerned itself with English occupational mortality as evidenced among the registered deaths of workers whose brethren had in that census stated themselves as belonging to one or other of its hundred occupational groups. The deaths amongst such people that occurred in England and Wales during 1900, 1901, and 1902 were assembled according to the occupational groups, and according to ages in those groups, and according to the causes of the deaths, and were then divided by three times the census population at each age and group that the appropriate death-rate should be found. Two sets of tables were prepared, one for the "occupied" in each calling, the other for the "occupied and retired." In this paper we are concerned only with the "occupied." To make comparison of the health conditions in the groups easier, there were also calculated "Comparative Mortality Figures" for the men in each calling between the ages 25 and 65, those ages being selected as giving a fair impression of the risks incurred by men who had settled down to carry on their occupations. In the earlier years the numbers in each group kept increasing as new recruits came forward, but from 25 onward the totals gradually decrease. The "C.M.F." were chosen as they were because it was observed that in 1900–02, 284,009 deaths had been registered among "All males, occupied and retired" of ages 25–65, of whom 6,722,009 had been enumerated in 1901; that is, 1000 deaths had occurred among every 71,005 males, and deaths were stated not as in death-rates per 1000, but per 71,005 men (the comparative mortality figure being the death-rate multiplied by 71·005). The basic or unit figure, 1000, the comparative mortality figure for "All males, occupied and retired," is equivalent to a death-rate of 14·08.

Among the greater occupations employing over 100,000 men daily, the highest C.M.F., 1987, was found among the "general labourers." That for merchant seamen was 1547, equivalent to a death-rate of 21·78, 50 per cent. above the average (14·08), as the C.M.F. directly shows.

In his summary dealing with the health conditions of different callings, Dr. Tatham, who prepared the report, observed (merely on the figures before him it should be said: later they will be shown to be incomplete) that "the seamen's loss of life from accident was nearly four and a half times the average among all occupied and retired males generally (266 against 59)" and further noted that, though decreasing, "their mortality from phthisis is still excessive (249 against 187)."

In Table V. of the report (p. clxxxiii.) there are stated, for a score of selected causes of death, in the middle of each page as a mean, the comparative mortality figures for "All Occupied Males," and above that some 30 groups who had the heaviest, and below some 30 who had the lightest mortality. In these lists merchant seamen come to notice as suffering unusually heavily from diseases of the nervous, circulatory, digestive and urinary systems, also from cancer, while having besides the heaviest mortality from accident.

A similar report, dealing with 1910–11–12, would doubtless have appeared by 1918 but for the war. Indeed, part of it, relating to "occupied and retired," was issued in 1923, but does not concern us here. The report appropriate to the census of 1921 is now in preparation, but as it has not yet appeared, the 1908 report is the latest official summary by the Registrar-General of the mortality among "occupied" merchant seamen.

Table I. below shows certain figures from the 1908 report that have interest as they concern seamen and some of the larger groups. The number of men in each group are stated, and then, for ages 25–65, the chief cause of mortality in the group, next, the comparative mortality figures for deaths from all causes, and from phthisis and accidents which are the chief risks of seamen; the corresponding death-rates are then stated for convenience. At the right-hand end of the table are the similar death-rates for the youngsters who join the trades, ages 15–20 and 20–25. The last line at the foot gives the figures for the Royal Navy in 1901, very much less than those of the Merchant Marine; but the Navy is a much younger service, having, in 1901, 61 per cent. under 25 years of age, while the other service had only 52.

In our examination of this table we will notice that between ages 25 and 65 the highest figure for total deaths and for deaths from phthisis were those of "general labourers," but that seamen in the Royal Navy had a very high death-rate from accident, though it was only half that of their professional brethren in the Merchant Marine, who had besides nearly three times the death-rate from phthisis the coal-miners had, and twice their death-rate from accidents. Between ages 15 and 20 merchant seamen had by far the highest death-rate from accidents; while coal-miners had three times the average, merchant seamen had a death-rate three times greater still—nine times the average. From ages 20 to 25 conditions are very similar, merchant seamen having again the highest death-rate of all, one very high for phthisis and the highest for death by accidents. It will also be observed that the young (ages 15–25) seamen in the Royal Navy had a risk of death from accidents higher than that of any other employed males, excepting only those of the merchant service. We should observe, too, how the risk of death from phthisis increases after 20 years of age. The mortality of agricultural labourers and coal-miners from phthisis

is very similar at all ages, but that of merchant seamen is always about three times as great—six times above that of the Royal Navy, though only twice as high from accident. From all of which we learn from the Registrar-General that boys who go to sea take on them a double risk of phthisis, but nine times the ordinary risk of death by accident. As Horace, though he did not know all this any more than they do, truly remarked, *Illi robur*.

This table, and the conclusions we have been able to draw from it, emerge from a Government publication of 1908 discussing conditions of 1900–02, not to-day's; concerns itself with the deaths of seamen while on ships' articles or in the hospitals to which they have been discharged sick from their ships; it has nothing to do with them before or after. So a man found at Port Said to have phthisis and there discharged to hospital will, if he die on the spot, be noted in the return; but if he recover sufficiently to take passage home after his discharge, and subsequently dies at home without again going to sea, his death will not be shown in the Board's return; it will be registered with the Registrar-General, when, if the local registrar elicits from whomever does register the death that the

TABLE I.—MORTALITY OF MERCHANT SEAMEN AND OTHERS.
Registrar-General's Report [Cd. 2619, 1908].

Part II. Supplement to Sixty-fifth Report. [Cd. 2619, 1908].		Group.	Number of men in group.	Ages 25–65.						15–20.			20–25.		
				Chief cause of death for the group.	Comparative mortality figures (deaths per 71,005).			Death-rates (deaths per 1000).			Death-rates.					
Reference number.	Page.				Total.	Phthisis.	Accident.	Total.	Phthisis.	Accident.	Total.	Phthisis	Accident.	Total	Phthisis.	Accident.
—	2	All males (occupied and retired)	10,463,289	Phthisis	1000	187	59	14·08	2·62	0·79	3·5	0·8	0·4	4·8	1·7	0·5
—	3	All occupied males	9,560,523	Phthisis	925	175	58	13·03	2·46	0·76	2·4	0·5	0·4	4·4	1·5	0·5
21	34	Farm labourer	546,138	Circulatory disease	572	82	53	8·05	1·15	0·75	1·7	0·3	0·4	3·5	1·0	0·6
83	131	Coal miner	609,402	Accident	846	85	123	11·91	1·20	1·73	3·2	0·4	1·2	4·5	1·0	1·2
95	149	General labourer	405,314	Phthisis	1987	450	120	28·05	6·33	1·69	4·4	1·1	0·7	9·0	3·2	0·9
17	28	Merchant seamen	97,065	Accident	1547	249	266	21·78	3·50	3·75	7·1	0·9	3·8	10·7	3·0	3·2
Navy health 1901		Royal Navy	98,410	Accident	503	44	150	7·1	0·62	2·1	15 to 25	59,930 men. 61 per cent. of total.		4·2	0·5	1·8

but they suggest that at that time, 20 years ago, merchant seamen had a mortality from all causes and from phthisis 50 per cent., and from accidents 400 per cent. greater than that of the ordinary citizen. Yet even here we have not a full statement of the risks of merchant seamen at that time.

It has long been complained by those who concern themselves with the health records of merchant seamen that there are no complete statistics of the deaths that occur amongst them, a complaint voiced most clearly and with fullest knowledge by Dr. J. Howard-Jones, M.O.H. of Newport (Mon.), whose paper in the *Journal of the Royal Sanitary Institute* (1915, p. 124) will well repay re-perusal. As he points out, we have two sources of information about the deaths of seamen, one the occupational mortality supplement to the Registrar-General's report on each census, which we have just been considering, the other the return of the deaths of seamen, issued annually by the Board of Trade. Unfortunately, as Dr. Howard-Jones remarked, they are not complementary to one another, and cannot be combined to give us the whole truth. Deaths of seamen occurring abroad are not registered with the Registrar-General, and do not come into his calculations at all. Thus he reports (1900–02) an average annual number, 354, of deaths among merchant seamen from accidents, but the Board of Trade put the deaths from accidents in 1901–02—not, so far as appears, an exceptionally heavy year—at 973 (unpublished return I was kindly allowed to see at the Board of Trade and copy). This figure suggests that seamen have a death-rate from accident far higher than that the Registrar-General propounds, a death-rate of 7 or 8, instead of 3·75. On the other hand, the Registrar-General's average for deaths from phthisis being 304, the Board of Trade only mentions 45. Why is that? The explanation lies in the purpose of the Board's return, and in the nature of that chronic and insidious disease. The Board of Trade only deceased was a sailor, his death will be classified with those of seamen, and if otherwise, otherwise. Then there are also the cases, discussed by Dr. Howard-Jones, of the men who, having begun while employed as seamen to develop phthisis and so to lose strength, realise they are not fit for work at sea and consequently take up some other lighter trade and die in that; these men are no longer mentioned as seamen, though it was in ships their phthisis was contracted. It will be convenient here to put side by side (Table II.) the Registrar-General's account of the deaths of merchant seamen, taking the average of three years, and the Board of Trade's statement for 1901–02.

When these are examined it becomes clear there is no relation between them. The populations stated for each are so very different, and [the figures shown in Table III.] evidence the very various distributions, per 1000, of the ages among the 97,065 seamen who, in the census of England and Wales, stated seafaring as their occupation (Registrar-General), and among the 117,558 * seamen who gave their ages (15–75) when the census was taken on board British ships throughout the world (Board of Trade), both on March 31st, 1901. The differing distributions suggest that of the younger men more are abroad, as there are more in the census of seamen, of the older more at home, and so more older men amongst the seamen in the census of England and Wales. The figure, 146,860, is the probable number of British seamen in the "first crews" of British ships, annually mentioned by the Board of Trade as an indication of the number of seamen there are. It is quite valueless for calculating a death-rate. On the whole, the Board of Trade's return probably gives an exact figure of the deaths of seamen in their ships, and a tolerable approximation to the causes, but it gives us no population figure by which to calculate a death-rate, as Sir P. Cunliffe-

* This figure on Table II., given as 120,412, includes "age not stated."

Lister allowed, and it neglects all deaths, sequelæ, of illnesses contracted in ships and not immediately fatal—all deaths, in fact, which occurred after discharge. It is, therefore, an under-statement; on the other hand, the Registrar-General's account, while including many of these deaths, does not concern itself with those occurring outside England and Wales, and its total population figure gives too small an idea of the number of seamen that there are.

TABLE II.—*Causes of Deaths of British Merchant Seamen About 1901.*

REGISTRAR-GENERAL, from [Cd. 2619, 1908] Part II. of his Supplement to his Sixty-fifth Annual Report. Average of three years, 1901–2–3.		BOARD OF TRADE, from an unpublished return for 1901–2. (E. and O.E.)	
Diseases.	*Deaths.*	*Deaths.* A. B.	*Diseases.*
		2 ..	Beri-beri
		11 ..	Cholera
		35 ..	Enteric fever
Influenza	23		
		28 ..	Malaria
		1 ..	Plague
Pneumonia	146	50 ..	Pneumonia
		3 ..	Scurvy
		17 ..	Small-pox
Phthisis	304	45 ..	Tubercle (all)
		7 ..	Venereal diseases
		8 ..	Yellow fever
Rheumatic fever ..	5	4 ..	Rheumatism and rheumatic fever
Cancer	132	6 ..	Cancer
Gout	1		
Diseases of—			Diseases of—
Nervous system ..	171	50 ..	Nervous system
Circulatory system ..	299	126 ..	Circulatory system
Respiratory system ..	126	24 ..	Respiratory system
Digestive system ..	93	75 ..	Digestive system
Urinary system ..	97	32 ..	Urinary system
		22 ..	Heat stroke
		5 ..	Homicide
Suicide	25	69 ..	Suicide
Accident	354	882 ..	Accident.
Alcoholism	27	19 101 ..	Alcohol *
Other	281	31	
Total	2084	1382 271	
		1653 ..	Total
Population (census, England and Wales) ..	.. 97,065	120,412	Population (census of seamen)
Death-rate	21·5	13·72 ..	Death-rate
Diseases .. 1678	80·5 %	34 % 555 ..	Diseases
Alcohol .. 27	1·3 %	7 % 120 ..	Alcohol
Accidents .. 379	18·2 %	59 % 978 ..	Accidents
2084	100·0 %	100·0 % 1653	

A = Parallel to those of Reg.-Gen. B. = Other.
* Direct and contributory.

That the Registrar-General gives six times as many deaths from phthisis (304) as are found in the Board of Trade's return (45), rather supports Dr. Howard-Jones' opinion that for every man who dies of phthisis in his ship, and is noted in the Board of Trade's return, there are nine others attacked. This under-statement of phthisis deaths, Dr. Howard-Jones tells us, led a former President of the Board of Trade to try to prove that phthisis was less fatal at sea than on shore, which we know is not the case. Similarly, it will be noticed, the Registrar-General gives for pneumonia 145 deaths annually, but the Board of Trade, for 1901–02, only 50. It seems likely that some of these others occurred while men were waiting for ships, and were due to bad lodging, insufficient food or clothing, in various proportions. The figures for cancer, 132 and 6, are also strikingly different. A word must be said about deaths from alcohol. The Registrar-General gives 27, probably all acute; the Board of Trade shows 19 due to acute alcoholism, but separates 10 from the "suicides" and 91 from the deaths from accident as deaths "to which drink was a contributory cause." In the rearrangement of the lists necessary so that they might be compared, these have all been included under alcohol, to which the deaths are more properly attributable.

It must now be clear to all that in 1900–02 there was no complete account anywhere of the causes of the deaths of seamen, but that what figures there were showed that 20 years ago the mortality in this employment was very high indeed, judged by the experience of other trades. In the second part of this paper endeavour will be made to show how the figures available for the deaths of seamen in 1921 appear to compare with those for the rest of the population. Fortunately, great and beneficial changes have occurred at sea in the interval. Food and cooking are better, and accommodation also. Mr. Havelock Wilson, in his wonderfully interesting book, "My Stormy Voyage through Life" (p. 200), says it is now quite common for owners when building a new ship to consult the National Sailors' and Firemen's Union as to possible improvements. That sailing ships are dying out has greatly diminished the number of deaths from accidents. Another great benefit, the provision by the Ministry of Health of treatment centres for venereal diseases, their extension to foreign ports, and the International Treatment Card (V. 44), promoted by the British Social Hygiene Council to secure continuous, consistent treatment, will in a few years materially lessen the deaths of seamen.

TABLE III.—*Proportion of Age-Groups per 1000 Men in 1901.*

Ages.	Regist.-Gen. Census of England and Wales.		B. of T. Census of Seamen.	Royal Navy.
	All males.	Merchant seamen.	Merchant seamen.	
15–20	156	88	98	} 609
20–25	143	156	200	
25–35	122	143	167	} 297
	121	143	167	
35–45	94	105	104	} 78
	94	105	104	
45–55	68	75	59	over 16
	68	75	59	45
55–65	44	41	19	
	44	41	18	
65–75	23	14	2½	
	23	14	2½	
	1000	1000	1000	1000

But 1921 must be left to another occasion, and in the meantime we may reflect on the curious arrangement which takes the men the Ministry of Health has cared for all their childhood and most of their youth, transfers them to the less expert medical care of the Board of Trade for their working life, and then returns them, many of them "broken in the wars," again to the Ministry of Health, which has had no watch over them meanwhile. Surely it would be better that the Ministry of Health should have the responsibility for them throughout. It would then, in five years anyway, be able to tell us, though that is beyond the Board of Trade just now, what is the absolute waste of life due to seafaring—not really a very difficult matter for medical experts. Then the industry would know what insurance should be paid for each man, and the invalids would not be unloaded on to the public, as no doubt happens now, however much is borne by charity. Then the Ministry of Health, continuously responsible for the health of merchant seamen and for their insurance funds, would be encouraged, for financial reasons, to enforce the best preventive measures, for, unlike the Board of Trade, it would remain responsible, not only for the men sick and injured while they were in service, but also for the invalids after discharge, whose number it would have every interest to reduce, and every inducement to see were kept revenue-producing and self-supporting, as long as possible.

THE LATE DR. W. A. HOLMES.—After 40 years of general practice in Barrow Dr. William Albert Holmes died on March 29th at the age of 68. He graduated M.B., C.M. at the University of Edinburgh in 1884, became M.D. with honours two years later, and took the D.P.H. at Cambridge in 1890. As a young man he was a keen cricketer. For many years he was surgeon to the borough police, and his work in this appointment was much appreciated in the district. Dr. Holmes's wife died about a year ago; he leaves two sons and a daughter.

MEDICINE AND THE LAW.

Death from Unnatural Cause: Common Law Duty to Notify.

DURING the debate on Mr. Tinne's Births and Deaths Notification Bill, Sir Richard Luce moved an amendment that where the cause of death was unknown to the medical practitioner, or where death appeared due to violence, neglect, poison or other unnatural cause, or seemed to be the result of an anæsthetic, he should not grant a certificate, but should forthwith report the circumstances to the coroner. This Sir Kingsley Wood resisted on the ground that the amendment would impose as a statutory duty what was already the duty of the medical practitioner at common law, apart from statute. This objection was legally correct, but so little is this common law duty known that there would have been no harm in embodying it in statutory form. At common law there is a duty upon any person about the deceased to give notice in such a case if Parliament has not already thrown upon any particular person the burden of informing the coroner of the death. It is not a duty of the doctor as doctor, but of any person who is in a position to give the information. This common law duty is complied with either by informing the coroner's officer or by telling the nearest policeman. Its origin is very ancient. It goes back to the twelfth and thirteenth centuries, when the finder of a person feloniously slain was expected to raise the hue and when townships might be amerced for failing to send for the coroner. Exactly what is the purport of the word "hue" it is hard to say; we know it best in the form "hue and cry" (*hutesium et clamor*). Possibly, said the late Prof. Maitland, the proper cry was "Out! Out!" and therefore the word is *uthesium* or *hutesium*. At any rate, out the neighbours would come with their bows and arrows and their knives and there would be shouting and horn-blowing, and the hue would be "horned" from vill to vill. But we no longer live in the age of bows and arrows; we no longer raise the hue and follow the cry. Sir Richard Luce's amendment would have laid down some definite guide for the medical practitioner in doubtful cases, and it is perhaps a pity that he was induced to withdraw it on the ground that it might have infringed the obscure and almost obsolete procedure under the common law.

Dangerous Drugs Act Prosecution: Failure to Enter Purchase in Register.

Dr. Samuel Grahame Connor, of Dryden Chambers, Oxford-street, was summoned at Marlborough-street police-court at the end of last month for failing on three occasions to enter, in a register kept for the sole purpose, a certain quantity (50 gr.) of morphine purchased by him. A fourth summons charged him with failing, in a prescription of morphine, to specify the address of the person for whom the prescription was given. Dr. Connor pleaded guilty to the four charges, and was sentenced by Mr. Cancellor to two months' imprisonment in the second division on each of the first three, and to a fine of £50 on each summons, making six months' imprisonment in all and £200 fine. Notice of appeal was given.

Dr. Connor was stated by the police to be a drug specialist and to have as patients several addicts known to the police. One of these, a Miss Young, had been convicted of forging a prescription in Glasgow, and Dr. Connor was found to be sending her morphine from London. When told that she was being treated by another doctor, Dr. Connor said he would discontinue treating her himself. A year later she was again interviewed by the police, and in the sequel an inspector called to see Dr. Connor's register. Dr. Connor kept no register, but produced a day-book showing dates on which prescriptions had been given. Between Jan. 25th and Dec. 27th of last year, it was stated, he had prescribed 575 gr. of morphine on 13 occasions and had only seen the patient six times. A firm of chemists produced their register showing in all 850 gr. ordered; only one prescription was for Miss Young; there were many orders signed by Dr. Connor and headed "for surgery use only." These orders, the prosecution contended, were not "prescribing" but "supplying" within the meaning of the Dangerous Drugs Acts. On behalf of Dr. Connor it was urged that his day-book was open to inspection and that no attempt was made to mislead anyone or conceal anything. The magistrate, however, refused to treat the case as a merely nominal breach of regulations, and, apparently influenced by the suggestion that the accused had been amply warned by the police and that his drug practice was on a substantial scale, inflicted what certainly seems a remarkably severe penalty.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Census of the Irish Free State.

ARRANGEMENTS are now complete for taking a census of the Irish Free State, and "Census night" is fixed for April 18th. Forms have been distributed by the Civic Guard, and their collection will begin on Monday. The form, which is in English and Irish, contains 13 columns, in which information is required concerning occupation, nationality, birthplace, race, language, religious beliefs, conditions of marriage, relation to head of family, issue born in marriage, and houses and buildings inhabited or uninhabited or in course of erection.

Women's National Health Association.

The annual meeting of the Women's National Health Association was held last week under the presidency of the Marchioness of Aberdeen and Temair. Dr. Alice Barry, in a report on the working of the babies' clubs, mentioned that the membership of the clubs was 3451; attendance of mothers at clubs, 27,166; infants, 17,998; and children, 20,082. There had been 10,946 medical consultations and 237 cases had been sent to fresh air and convalescent homes. Drugs and food had been distributed by the clubs at a reduced rate, or free to necessitous cases. Prof. J. W. Bigger moved a resolution urging public authorities to provide for the protection of milk, to ensure a free supply for children of from 1 to 5 years of age, and to make the public understand the value of milk as a food and the importance of having it hygienically treated. Dublin milk was very bad, but the increased demand for bottled milk showed that people were taking an interest in having better milk. Bottled milk, however, might be as dirty as any other. The public health authorities should, he suggested, protect the terms "Certified," or "Grade A," in relation to milk. There was at present no milk reaching Dublin under "Grade A" conditions. Other articles of food as well as milk required care in production and sale.

Queen's University of Belfast.

The late Right Hon. J. C. White, formerly Lord Mayor of Belfast, left a bequest of £60,000 to Queen's University to endow a chair of biochemistry and lectureships in that subject and in bacteriology. The new biochemical laboratory was inaugurated on March 26th. The Vice-Chancellor of the University, who presided, pointed out the great and growing importance of biochemistry; it seemed to be the department in which most progress was to be hoped for in the immediate future. The Lord Mayor of Belfast, Sir W. P. Turner, in proposing a vote of thanks to Mrs. White for unveiling the memorial tablet, dwelt on the public services of her late husband, and on the prosperity and progress of the Belfast Medical School. Prof. J. A. Lindsay, in seconding the motion, pointed out that universities were largely dependent on private benevolence, for experience had shown that they could not expect to derive more than a third of their

income from students' fees. The contributions of the State and of municipalities to university education had in the past been somewhat meagre, but recently there had been some advance. America gave a splendid example of private beneficence in support of universities, and the proportion of university students to the population in that country—1 to 300—was the highest in the world, Scotland being a good second with 1 to 400, and Germany third with 1 to 600. He hoped that the White bequest would be a stimulus to further benevolence in Northern Ireland.

The chair of biochemistry is held by Dr. J. A. Milroy.

Public Health Services.

THE INFLUENZA EPIDEMIC IN GLASGOW.

ALTHOUGH reports in the daily press have exaggerated the position, there has undoubtedly been an epidemic of influenza in Glasgow during the last few weeks. Dr. W. G. Clark, assistant medical officer of health for the city, has kindly supplied us with the actual figures of deaths from certain causes during the five weeks ended April 10th. These are as follow:—

	Week ending—				
	March.			April.	
	13th.	20th.	27th.	3rd.	10th.
Influenza	2	8	25	66	83
Pneumonia	31	39	87	119	98
Bronchitis	14	20	38	54	35
Other respiratory diseases	7	4	5	7	4
Encephalitis lethargica ..	—	—	1	4	1
Total deaths from all causes	295	346	452	598	484
Death-rate per 1000 ..	15·4	17·4	22·5	29·3	24·1

The normal number of deaths from pneumonia in Glasgow at this season is round about 30 per week, while those from influenza are usually under 10. In January of 1922 and March of 1924 there was a definite prevalence of both these diseases, that of 1922 being heavier than the present. Contrary to current popular statement there has been no significant increase in the number of cases notified as encephalitis lethargica during this period.

INFECTIOUS DISEASE IN ENGLAND AND WALES DURING THE WEEK ENDED APRIL 3RD, 1926.

Notifications.—The following cases of infectious diseases were notified during the week:—Small-pox, 130 (last week 178); scarlet fever, 1564; diphtheria, 979; enteric fever, 42; pneumonia, 1376; puerperal fever, 38; cerebro-spinal fever, 5; acute poliomyelitis, 4; encephalitis lethargica, 38; continued fever, 1; dysentery, 7; ophthalmia neonatorum, 93. There were no cases of cholera or plague notified during the week. There was no further case of typhus fever notified during the week, although the return omits to state so.

Deaths.—In the aggregate of great towns, including London, there were 3 (1) deaths from enteric fever, 107 (44) from measles, 8 (2) from scarlet fever, 66 (8) from whooping-cough, 50 (16) from diphtheria, 46 (10) from diarrhœa and enteritis under 2 years of age, and 223 (48) from influenza. The figures in parentheses are those for London itself. The notified deaths from influenza are 87 in excess of the previous week. The measles deaths have now exceeded 100 for seven weeks in succession.

THE LATE DR. J. A. GUTHRIE.—Dr. James Ashton Guthrie, who died at his home at Halifax on April 3rd in his 85th year, was the son of Mr. Daniel Guthrie, of Brierley Hill, Staffordshire, and was educated at Queen's College, Birmingham. As a young man he went to Halifax as an assistant, and seven or eight years later moved to Edinburgh, where he remained for five years until in 1885 he took his degree as M.B., C.M. Returning to Halifax he remained in general practice until 1914. He was keenly interested in scientific developments and was an active member of the Halifax Scientific Society.

Correspondence.

"Audi alteram partem."

THE PROBLEM OF MALIGNANT DISEASE: A VIEW.

To the Editor of THE LANCET.

SIR,—In the Registrar-General's Statistical Review of England and Wales for the year 1924 it is stated that the mortality from cancer has been steadily rising since 1884, and during 1924 there were more deaths from this cause than in any previous year for which official records had been kept.

In the face of such an official statement, is it not time we began to question the wisdom of our present methods and seek something better if it can be found? Surgery has failed to meet the situation, and we have the testimony of one of the most eminent members of this branch of the profession that no further elaboration of surgical technique can make any difference; so that it may fairly be said that we have arrived at a "dead end." The mortality steadily increases—this in spite of the fact that surgical methods and technique have been steadily improving year by year. Also it is to be remembered that the surgeon has the best possible chance to make good. All cases come to him in the first instance. He keeps the early and operable ones to himself, passing the inoperable and hopelessly incurable on to others. His statistics are naturally based on the former and yet the results are scarcely satisfactory, as most surgeons are quite ready to admit. Such, very briefly, is the present situation, and however much we may wish to change it the alteration is not going to be an easy one.

An important reason for this is the present tendency for patients to be taken directly to the specialist in a particular method of treatment, and on the principle that "there's nothing like leather," his own methods are used. For this reason, among others, I deplore the elimination of the pure consultant from our medical service. From him at least we could count on getting some sort of independent opinion—more than can be said of our present system, which is not only antagonistic to the best interests of the patient, but is a formidable barrier to progress in the healing art.

It is a cardinal principle of medical service that when we are called upon to deal with some disability we should exhaust the possibilities of such curative agents as are at our disposal before resorting to surgical interference. The most important exception to this rule is malignant disease, and however correct this may have been at one time it is very doubtful if it can be considered so now.

Of the multitude of things that from time to time have been suggested as a possible cure for malignant disease, the gamma ray as derived from the X ray tube or from radium is the only one that has shown itself to have any real value. (It is true that lead is showing some promise, but while hoping for the best we must be patient for the present.) The fact that the ray has a more than ordinarily prejudicial influence on the development of the malignant cell has been known to us for nearly 25 years, and the question naturally arises: What have we done to establish the real and full value of radiation in malignant disease?

Personally I am of the opinion we have done very little, but I hope I may not be misunderstood. I know that an enormous amount of work has been and is carried on, and it is far from my wish to disparage it in any way, but almost all of it is concerned with advanced cases, many hopelessly incurable, and also those that have been through the hands of the surgeon, which seriously impairs any chance of success from radiological methods. Experience gained under such conditions has its value, especially if it serves to give relief to the patient and prolong life under comfortable conditions. It teaches us no more, however, than we

have known for a long time past, but as for dealing with the main problem we are not getting any "forrarder."

Notwithstanding the magnificent work that has been done at Erlangen for years past it never seems to occur to anyone here to give radiation a chance to show what it can do, in competent hands, for cases of malignant disease in early and curable stages, and before the surgeon has so mutilated the tissues as to make radiological methods ineffective. Under present conditions once a case is turned over to the radiologist it means, with very few exceptions, that it is only a question of time, and seldom a long one. So that while we have at our hand an agent which by general admission possesses curative powers over malignant disease, our general practice is to confine its use to the less curable cases.

Let us consider for a moment what has been going on in the Erlangen clinic for some years past. In my original communication to the Royal Society of Medicine in December, 1920 (THE LANCET, 1921, i., 24), I related the results obtained in carcinoma of the uterus—such cases as would be deemed favourable for operation here and dealt with accordingly. These results were so superior to those obtained by surgical methods that for some time surgery had been abandoned for cases of malignant disease of the female pelvis, and now five years later, this is still the rule of the clinic. The attitude has been to discredit these claims; yet Prof. Wintz's clinic has been freely open to anyone who cares to come and make an honest investigation, and it is quite certain that if there was anything about it that was not quite straight it would have been found out long ago, and incidentally the practice of the clinic would have been altered. Furthermore, Prof. Wintz attended the First International Radiological Congress held recently in London, in the course of which he gave his results of the X ray treatment of cancer of the breast. Here, again, the results were uniformly better than obtained by surgery, and, as he rightly emphasises, only the results obtained by the best surgeons are admissible for comparison.

It might be thought that some very serious notice would have been taken of a communication of such overwhelming importance. One almost blushes to relate that it has been passed over with scarcely a nod of recognition, those who now have the first say in the treatment of cancer in this country not welcoming the new departure. They base their attitude on the contention that early operation is the best and only method of dealing with malignant disease, and what with constantly preaching this doctrine, teaching it to students, and the publication of articles and pamphlets for public consumption, the profession and a large part of the educated public have got the idea that there is no treatment for malignant disease and that the only hope lies in the efforts of the surgeon. Enthusiasts are working hard at cancer research all over the country, but for all the time, work, and money spent they have not brought us appreciably nearer the desired end.

If I were asked the main reason for this failure I would say it is because all this work is dominated by the surgical view, which is definitely antagonistic to any change in present practice. How else are we to account for the fact that as yet no proper effort has been made in this country to test the results obtained at Erlangen? There are plenty of sets of apparatus such as are used there, and we have men in charge of them quite able to use them to the best advantage—if they get the chance. But the surgeon retains the favourable cases, and on these he bases his statistics. All the advanced and inoperable cases, as well as the failures of his own work, he passes on to the radiologist, and it is on the results attained on these—quite beyond surgery to cope with—that he bases his opinion of the value of radiation in malignant disease. For those who are prepared to go into this question with an open mind there is ample evidence to show that when working under equally favourable conditions radiology can show at least as good results as surgery without any of the risks and mutilations involved in the latter. While it may be a fine thing to relieve a patient of a malignant lesion by operation, it is a much finer thing to get the same result leaving the individual intact. That this can be done is shown by the results attained at Erlangen, and I firmly believe in the possibility of repeating them here because of the high degree of success I have had in the relatively few early cases of malignant disease that have been referred to me before there had been any surgical interference. I wish to emphasise the fact that success after radiation depends on free and active blood and lymph circulations. This essential condition cannot be met in an area that has been the site of surgical interference, and this is one more, and a very important, reason why, if we are to make any definite progress in our methods of dealing with this problem, the surgeon's attitude must alter. Surgery can secure but a very moderate degree of success; alternative methods are tested only under the most unfavourable conditions.

I think it is more than time the Erlangen technique were given a fair and honest trial, and if carried out faithfully I predict with the utmost confidence that the lot of the unfortunate victim of malignant disease will be altered for the better—mentally, physically, and materially. I appeal to the profession as a whole, and particularly to general practitioners, to look into this question most carefully; to accept no evidence from either surgeons or radiologists as gospel truth, but only at its real value, allowing a reasonable discount for personal interest, and see if it does not seem worth while giving their patients an alternative to the knife—the most crude method of dealing with any disease our unfortunate bodies are called upon to bear.

I am, Sir, yours faithfully,

REGINALD MORTON.

Park-crescent, Portland-place, W., April 7th, 1926.

A COMPENSATION PROBLEM.

To the Editor of THE LANCET.

SIR,—Your correspondent "Practitioner" (THE LANCET, April 3rd, p. 736) asks for views on the relation of injury to tumours of the testicle. A history of preceding injury to the testicle is obtained in 10 to 20 per cent. of the cases of testicular tumour—some writers give a higher figure—and the majority of observers incline to regard the injury as a definite cause of the neoplastic process. But, as I pointed out in a recent Hunterian lecture, it is difficult to reconcile this view with the fact that, although almost every active male receives at some time in his life a severe blow on the testicle, tumours of the testicle are rare. On an average three cases are treated in each year at the London Hospital. From an extremely interesting case reported at some length in my lecture it appears most probable that the part played by injury is not to initiate the neoplastic process, but rather to stimulate to more rapid growth a pre-existing but hitherto unobserved tumour. Whichever of these views be the correct one there is a case for compensation if it can be proved that the testicular swelling only became apparent after an injury to the testicle. But there is no reason at all to suppose that an injury limited to the back, such as occurred in the case brought forward by "Practitioner," could have any possible influence on the behaviour of a scrotal testicle.—I am, Sir, yours faithfully,

H. W. B. CAIRNS.

London Hospital, E., April 6th, 1926.

*** Mr. Cairns's lecture will shortly be published in THE LANCET. We have received other replies to "Practitioner's" questions from surgeons who desire to remain anonymous. One writes: "Some important points are wanting in the clinical history supplied by 'Practitioner.' Was there any direct injury to the testicle, and did the patient report pain or tenderness immediately after the accident? Was there any subsequent swelling of the testicle or bruising of the scrotum? Was the testicle fully or imperfectly

descended? Was the growth of the mixed form that is recognised as congenital?

"Assuming that there was no local injury to the testicle, the growth could not, by any stretch of imagination, be ascribed to the injury. A single direct injury on normal testicles has not, so far as I know, ever been proved to cause a new growth. It has been claimed, although I very much doubt it, that repeated injuries to an imperfectly descended testicle are the cause of new growth. If the testicle was imperfectly descended there is no need to attribute the growth to a single injury, for the frequency with which growth develops in such a testicle, apart from injury, is recognised. If the histology is that of a mixed growth, the congenital origin, apart from injury, is clear. In any case there is nothing to connect the appendicitis with the injury or with the orchidectomy."

Another surgeon writes: "In regard to the testicle, it is well known that in the majority of testicular tumours there is a history of injury some time before the appearance of the tumour, and the injury is accordingly accepted as having some ætiological significance. In this case, however, we can safely assume that the tumour was a very slowly growing one because 18 months were allowed to elapse between its recognition and its removal; and as the injury occurred only four weeks before the first recognition of the swelling in the testicle, one is safe in maintaining that it must have been present before the accident. Arguing on these lines I feel confident that a claim for compensation cannot be maintained. In respect of the attack of acute appendicitis I should give a strong expression of opinion against the accident having had anything to do with it at all. Trauma as an ætiological factor in appendicitis is a very debatable point and the balance of opinion is against it. Anyway, in this case it seems out of the question to blame an accident 19 months previously for a subsequent attack of appendicitis."—ED. L.

UROTROPINE, CITRATE OF SODA, AND BROMIDE OF AMMONIA IN THE TREATMENT OF EPILEPSY.

To the Editor of THE LANCET.

SIR,—Recently I have investigated the treatment of epilepsy in the light of my belief that an important factor in the causation of this disease is the colon bacillus; and the one outstanding result of my investigations is the discovery that the power possessed by ammonium bromide of preventing epileptic fits is decidedly raised by administering with this remedy urotropine and citrate of soda. In almost every case of fits under my care I now give two separate prescriptions, as follows:—

(1)	(2)
℞	℞
Ammonium bromide .. ℥iv	Sodium citrate .. .. ℥vi
Urotropine .. .. .. ℥ii	Sig.: Take one teaspoonful in half a tumblerful of water night and morning.
Chloroform water to .. ℥vi	
Sig.: Take one tablespoonful in water night and morning.	

Under the action of the medicines shown in these two prescriptions the fits in all my cases have so far disappeared. In one remarkable case of hystero-epilepsy, where attacks were occurring at the rate of three to eight a day, and where 20 gr. of bromide, thrice daily, failed to control them, the use of these prescriptions in a short time caused them to cease. The following is a record of a case which has been under observation for a considerable time.

A. B. C., a male aged 44 years, has been suffering from fits for 20 years. From 1907 to 1917 he took, without much benefit, about 20 gr. of bromide twice daily. In February, 1917, he came under my care, and although I gave him large doses of the mixed bromides night and morning, he continued to have fits at varying intervals to September, 1924. The following is an accurate account of his seizures: 1917, six; 1918, nine; 1919, ten; 1920, four; 1921, seven; 1922, six; 1923, six; 1924, four. On Sept. 16th, 1924, I prescribed 20 gr. of bromide of ammonia to be taken night and morning, and one teaspoonful of citrate of soda to be taken with each dose of bromide. Subsequently I added to each dose of the bromide mixture 10 gr. of urotropine. The result is that the patient's fits have ceased and that up to the date of writing there has been no recurrence.

No unpleasant by-effects have appeared in any of the cases treated with urotropine and citrate. I have also tried benzoate of ammonia, but as this seemed in some instances to depress the patient's spirits and to derange his digestion I have nearly ceased to prescribe it. Further investigation will show to what extent the daily dose of bromide could, in course of time, be reduced.—I am, Sir, yours faithfully,

E. J. MCC. MORRIS, F.R.C.S. Edin.

Poynders-road, S.W., April 10th, 1926.

FAMINE IN THE TROPICS.

To the Editor of THE LANCET.

SIR,—In my letter on the above subject which appeared in your issue of March 13th, on referring to the "1 lb. ration" instituted by the Government of India against the strenuous advice of Cornish, I stated "from Jan. 31st, 1876, to May 22nd, 1877, this diet was in force." In both instances the year quoted should have been 1877. As the context shows famine was not officially recognised till October, 1876, the discrepancy is apparent; but seeing that the results of error in nutrition both in individuals and populations must be estimated not only as to its nature but in the light of duration of its incidence, I venture to ask your permission to correct the slip of diction for which I am responsible, lest the casual reader be misled. Had the "1 lb. ration" been in force for the longer period, a diminution not of 3,000,000 of the population of the affected districts, but a great multiple of that number would have been inevitable.

I am, Sir, yours faithfully,

W. G. KING,
Colonel, I.M.S. (retd.)

Hendon, N.W., April 5th, 1926.

POSTURE IN EMPYEMA CASES.

To the Editor of THE LANCET.

SIR,—In Mr. Twistington Higgins's most interesting article on empyema in children which appeared in THE LANCET of March 20th, there is one piece of advice with which I would join issue. It reads as follows:—

"Once the tube is out the child should be encouraged to lie on the good side and deep-breathing exercises should be continued."

Presumably this indicates that it is the opposite side—i.e., the side where the resection of the rib was made—which will be given thereby a chance of functioning better than the sound side on which the patient is advised to lie. In an article of mine which appeared in THE LANCET of April 26th, 1919, p. 697, on Gunshot Wounds and Other Affections of the Chest I wrote:—

"Great assistance in making a collapsed lung function properly is rendered by bending the body away from the injured side, as the patient lies on his back. This position causes a partial collapse of the sound lung by mechanical pressure of the ribs. Also, when possible, the patient should lie on the injured side when preparing for sleep."

I have often been questioned about this advice, doubt being cast on the idea that it is the lung on the side on which the patient is lying that is getting more air than the opposite lung. From careful observation I believe that this is really so. The side on which the patient lies sinks into the bed in a convex position and apparently the lung functions freely, the opposite or upper side is mechanically compressed by the position assumed, and expansion is restricted. I therefore always advise patients with an empyema to lie on the back, as described, or on the side where the rib has been resected, both from a drainage point of view and for expansion of the lung.

I am glad that Mr. Higgins advocates having breathing exercises applied very soon after operation. Five days after operation is the earliest time in which I have been asked to give exercises, and in the war the average time was about 12 days. Patients were quite capable of starting exercises at this period, and I believe that, by getting quickly on to breathing exercises, not only was drainage helped, but the risk of adhesions and pockets forming was much lessened.—I am, Sir, yours faithfully,

CORTLANDT MACMAHON, M.A. Oxf.,
Instructor for Speech Defects and Breathing Exercises at St. Bartholomew's Hospital.

April 7th, 1926.

PRINCIPALS AND LOCUM TENENTS.

To the Editor of THE LANCET.

SIR,—A letter from the Medical Defence Union which appeared in your issue of March 27th has led to inquiries as to the attitude adopted by the London and Counties Medical Protection Society where actions are brought against principals who are members of the Society in respect of the professional work of locum tenents who are not members of the Society.

Several years ago a case of the kind came before the Council of the London and Counties Medical Protection Society and it was undertaken on behalf of the member, although the locum tenent from whose work the claim arose was not a member of the Society. This did not involve any departure from the rule that one subscription should not be allowed to cover the work of two or an indefinite number of practitioners associated as principal and assistant. The Society was advised that a principal is not legally liable for the default of a locum tenent provided he has used proper care to make sure that the locum tenent is properly qualified and competent. The case referred to never went into court, but the Society has ever since undertaken any case of the kind and intends to do so.

The legal position is not as certain as could be wished, but the fact that cases in which the London and Counties Medical Protection Society has challenged legal proceedings have not resulted in proceedings being carried to trial by the other side seems to indicate that the view taken up by the Society of the legal position is well founded. When a case of the kind does come to trial it is more than probable that it will have to be taken to the House of Lords if a final decision is to be obtained, since the cases bearing on the question in the Court of Appeal are somewhat conflicting.

I am, Sir, yours faithfully,

HUGH WOODS,
General Secretary to the London and Counties Medical Protection Society, Ltd.

Victory House, Leicester-square, W.C., April 12th, 1926.

THE SEAMEN'S HOSPITAL.—From the 105th annual report of the "Dreadnought" Hospital at Greenwich, with its branches and convalescent homes, we learn that the re-modelling of the hospital, the erection of a pathological unit, and the provision of new quarters for the nurses are all being taken in hand. When these works are finished the "Dreadnought" will, it is stated, be "one of the most complete hospitals in the country." There are now two resident medical officers, the nursing staff has been enlarged, and the hospital has been recognised as a nurse's training school.

JERUSALEM OPHTHALMIC HOSPITAL.—The report of the Ophthalmic Hospital of the Order of St. John in Jerusalem shows that during the past year activity increased. Perhaps the most remarkable fact brought out is that, although for nearly three months only two British surgeons were on duty, there were more than 81,000 out-patients' attendances and 4407 operations. Light and power have been installed and the X ray department has been in working order for the last six months. 87 per cent. of the patients suffer from trachoma, "and most of the population continue to live under conditions which ensure its spread."

Obituary.

SIR HARRY BROOKES ALLEN, M.D. MELB., LL.D. EDIN.,

EMERITUS PROFESSOR OF PATHOLOGY, UNIVERSITY OF MELBOURNE.

Sir Harry Brookes Allen, one of the best known figures in Australian medicine, was born in 1854, the second son of Mr. T. W. Allen, of Geelong, was educated at the Church of England Grammar School and later at the University of Melbourne, and graduated in medicine at the age of 22. His ability and industry secured him the first place amongst his contemporaries both at school and at the University, and after a year's special study in Europe he returned to Melbourne and was immediately appointed assistant to Prof. G. B. Halford, who had held the combined chair of anatomy and physiology at Melbourne since the inception of the medical school. Shortly afterwards a redistribution of the chairs occurred, Halford retaining that of physiology while Allen was appointed professor of anatomy and pathology, a position which he held from 1882 until, and more than 20 years later, Prof. R. J. A. Berry relieved him of his anatomical duties. He was one of the first, if not the first, of the alumni of the University of Melbourne to occupy a professorial chair in his own University; previously the professors were imported from Europe, but the departure in Allen's case was more than justified.

The long tenure of a chair in which the studies of anatomy and pathology were combined is a good illustration of the best medical education of the time, before the growth of bacteriology reached its full importance in the medical curriculum; and at a small medical school, such as Melbourne then possessed, the combination of normal and morbid anatomy in teaching was found very valuable. Allen availed himself of his opportunities to the full, utilising the wealth of autopsic material at the Melbourne Hospital to which, as professor of pathology, he was the pathologist, for the teaching of anatomy as well as pathology. "All old Melbourne students," writes a very distinguished one to us, "will recognise the value of the opportunities they enjoyed to learn anatomy upon the fresh subject as well as in the dissecting room. Allen was a great teacher, if rather formal in methods. He demanded a high standard of effort from his pupils, but they all realised that he, on his part, spared no endeavour to provide them with an adequate training for their future medical studies. As a consequence, every medical student at Melbourne had a sounder basis of anatomy and morbid anatomy whereon to build than, I believe, is usually the case." As the outcome of his work he created the pathological museum of the University, and with a passion for order and arrangement he devoted all his spare time for many years to its enrichment.

The responsibility for both anatomy and pathology in a school of 300–400 students might justly have absolved him from taking an active part in administration, but the exact opposite occurred, for he found time and energy to act for upwards of 30 years as dean of the medical school. Here, like many anatomists before him, he showed an unusual capacity for affairs. Once a line of policy was determined, he was a master at organisation, and if, as a director of academic policy, he was, perhaps, too much influenced by precedent and more inclined to adopt than to adapt, he proved thoroughly successful. Nor were his administrative services confined to the medical school. Perforce, involved in the general administration and policy of the University, he was for many years an active member of the Council, and the governing body recognised in him an untiring and sagacious coöperator.

Allen was by nature a student rather than a discoverer, while his multifarious preoccupations with the teaching of two important subjects, the development of the school and the progress of the University left him little time for research. Nevertheless, his knowledge and experience of morbid anatomy was so

comprehensive that if he had devoted some of the time unselfishly spent in public work to recording his observations he would have gained a wide reputation as a pathologist. Most of his observations on morbid anatomy which he did find time to record will be found in the medical journals of Australia and in the proceedings of various Australasian medical congresses. Amongst the more important are a series of papers on the ætiology of arterial degenerations, where he was one of the first to recognise the relation of certain types of degeneration to previous infection with syphilis.

Among his many activities there should be mentioned that he was, in his younger days, the editor of the *Australian Medical Journal*, and for some time honorary secretary of the Medical Society of Victoria. He was a member of the Central Board of Health for a period and also of the Board dealing with tuberculosis in cattle, in connexion with which he was early to perceive the developments that might arise from proper meat inspection followed by cold treatment. In 1908 he was President of the Australasian Medical Congress, and just before the war was appointed a member of the executive committee of the International Medical Congress.

Personally, Allen was formal in manner, always courteous and considerate and a loyal colleague, but outside his family circle there were few who were on terms of intimacy with him. He possessed a phenomenal memory, and could visualise whole pages of books and reports. This enabled him to remember a chain of reasoning where there was no need to follow the details—a very valuable quality in a much occupied man. As dean of the medical school for so many years, it was inevitable that one of his ability, personality, and capacity for affairs should come to exert a powerful influence within the medical profession in Victoria, and, in fact, he was for many years its recognised leader, always maintaining the best traditions. Some two and a half years ago he had a serious cerebral hæmorrhage from which he never completely recovered, since when he had been a complete invalid. He married the daughter of Mr. Henry Mason, of the Liverpool Customs, by whom he had three daughters.

KATE MARION VAUGHAN L.S.A., D.P.H. CAMB.

WE regret to announce the death on March 29th of Dr. Marion Vaughan (née Hunter) at the age of 61. Dr. Vaughan had been in bad health for some years, but she was reticent about herself, and the news of her death has come as a shock to a wide circle of friends and patients. Marion Hunter was born in Flintshire, one of a family of seven, and was educated at the Blackheath and South Hampstead High Schools. Then, in early womanhood, came the question, in her circumstances inevitable, of a profession, and with the help of her uncle, the late Sir W. Wilson Hunter, she was able to enter the London (R.F.H.) School of Medicine for Women. From every point of view her training was a good investment, for she possessed the gifts and the character required in medical practice. As a student she was prominent in her year; from her earliest days her energy, practical ability, and extreme kindness to those in need of help were conspicuous qualities.

In 1894 she took the L.S.A. and later, from King's College, took the D.P.H. Cambridge. After qualifying she held the posts of clinical assistant and assistant anæsthetist at the Royal Free Hospital, and then, in 1898, went abroad to India and to Egypt, where she did valuable work combating plague in Government service. When she returned to England, she settled in South Kensington and began to build up the large general practice which afforded such a conspicuous testimony to the esteem in which her patients held her. In 1909 Marion Hunter married Percy Cecil Vaughan, barrister-at-law, and the happiness of their brief married life—Mr. Vaughan was killed in the war in 1915—coloured her whole subsequent career. Dr. Vaughan herself worked for a time in France at the Anglo-French Military Hospital, and another side of her war work was the foundation, in 1916, of the West Islington Welfare Centre. In this she had the coöperation of Mrs. Edward Moon. During the ten years which have elapsed since its foundation, the work at this centre has grown steadily from very modest beginnings until to-day West Islington is among the largest welfare centres in London. In addition to the out-patient side, at which last year there were 18,000 attendances, West Islington has from its beginning had a ward with 15 cots for sick and ailing babies, and here, above all, Dr. Vaughan showed her untiring devotion and skill. It was never too late for her to come from the other side of London to see a sick baby, and, indeed, the progress of this centre was one of the keen interests of her busy life.

Dr. Vaughan was eager to keep herself abreast of medical science. She took trouble to obtain special experience, especially in pediatrics, and worked for a time as assistant medical officer to the London County Council. Later she became keenly interested in the recent developments of light treatment, and last year initiated, with others, an artificial sunlight clinic in Mayfair. In everything she did she was quick and practical, wise and prompt in crises, of good judgment, and unfailing kindness to those who sought her help. It is no exaggeration to say that she accepted the troubles of her patients, and took their lives as well as their bodies under her care, in order to bring them into happier as well as healthier ways. Her gallant struggle against ill-health during the last four or five years was unperceived by many of them, so great was her self-control. Dr. Vaughan had an imperious manner, and her abrupt decisions were sometimes disconcerting to her friends, but many patients found in her just those qualities of strength and firmness which they needed for their support in times of trouble. The fact that early financial stress had prevented her from proceeding to take higher degrees and possibly to adopt the life of a consultant was a blessing to the many families who relied on her not only for sound medical advice but for common sense and kindly interest in their daily routine. In Dr. Vaughan Kensington has lost a practitioner of unusual skill and merit.

FREDERICK WILLIAM AXHAM, L.R.C.P. EDIN.

Dr. F. W. Axham, who died on April 8th at the age of 86, received his medical education at St. George's Hospital, London, and qualified as M.R.C.S. Eng. in 1861; six years later he became L.R.C.P. Edin. by examination. Before settling down in England he saw service in China as surgeon-in-chief to the Franco-Chinese Forces and worked as north district surgeon and sub-immigration agent in British Honduras. Then he came back to London, where he practised for many years in Golden-square, and was medical officer to the Westminster Union Workhouse. In 1905 he began to be interested in the manipulative surgery of Mr. (now Sir Herbert) Barker, and watched him at work on many occasions. He consented to help Mr. Barker in his practice by administering anæsthetics, and during five years no complaint was made against this conduct. In 1911 an action was brought against Mr. Barker for damages, and in the course of the hearing Dr. Axham described his work. This led to his appearance before the General Medical Council in May of the same year, at the complaint of the Medical Defence Union, on a charge of having assisted an unregistered person to practise. Dr. Axham said that he realised that he had not followed the strict rules of the profession and must put up with the consequences rather than give an undertaking not to give anæsthetics for Mr. Barker in future. His name was removed from the Medical Register and his diplomas were withdrawn by the Colleges which

had granted them. He continued to help Mr. Barker, and in an unsigned letter to the *Saturday Review* (March 24th, 1917, p. 279) explained that he was doing what he conceived to be his duty at considerable personal sacrifice.

Dr. Axham retired from practice some years ago, but it was not until 1925 that any application was made for his name to be replaced on the Medical Register. Before the General Medical Council could take action it was necessary that Dr. Axham should have one of his diplomas returned to him, and his reinstatement by the Royal College of Physicians of Edinburgh came too late for the Council to consider his application at its last meeting in November.

The medical profession has had much sympathy with Dr. Axham in the late phases of the contentions around him, though quite aware that the criticisms directed against the General Medical Council were frequently erroneous, and this in quarters where fuller knowledge might have been expected, and where the case was not being used as an opportunity to discredit the medical calling.

GEORGE SHERMAN BIGG, F.R.C.S. EDIN.

Dr. Sherman Bigg, who died on Easter Day in his seventy-first year, was educated at Overslade and Rugby Schools. He was a good athlete and swimmer and was captain of Fives at Rugby. He studied at the Middlesex Hospital and became L.S.A. in 1876, M.R.C.S. in 1877, and F.R.C.S. Edin. in 1888. He joined the Army Medical Service and served as staff surgeon under General Macpherson at Allahabad and later at Dover, and also throughout the Egyptian campaign. On leaving the army he settled in practice in Victoria-street, Westminster. Ill-health compelled him to retire in 1923, and he suffered much up to the date of his death. He wrote a number of papers on hygiene in the tropics and child welfare.

HAROLD TURNER FINLAYSON, M.B., CH.B. ABERD.

Dr. H. T. Finlayson, who has died at Formby, Lancashire, at the early age of 36, was the eldest son of Mr. Boyd Finlayson, clerk to the Aberdeen Educational Authority, and had been in practice at Formby for about ten years. He was educated at Aberdeen and at St. Mary's Hospital, London, where he acted as casualty officer after graduating in 1912. After holding a number of house appointments in Dundee and elsewhere and spending some time as ship's surgeon in the East, Dr. Finlayson saw service in the early days of the war with the Grand Fleet, and later held a commission in the R.A.M.C. Settling in practice at Formby he kept in touch with many of the special departments of medicine and surgery, and was appointed clinical assistant in the Royal Southern Hospital, Liverpool, medical officer of the Holmewood School and Children's Sanatorium, Freshfield, and neurologist to the Ministry of Pensions. The self-sacrificing way in which he did his work led him to overtax his strength. Dr. Finlayson had many and varied interests—athletic, social, artistic—and to any particular case in which he was engaged he brought a human touch, a sense of sympathy, and a hopeful outlook which made his services especially helpful.

THE LATE DR. H. T. PRINGLE.—At the age of 85, Dr. Henry Turnbull Pringle died on March 30th at Ferndown, Dorset, where he had been living for some years past. He was born in Roxburghshire and graduated in medicine at the University of Glasgow with first-class honours in 1866, proceeding to the degree of M.D. two years later. On qualification he was appointed medical officer to the Glamorgan County Mental Hospital at Bridgend, and later became medical superintendent there. In 1904 he relinquished the position, but retirement did not mean inactivity. He was made a justice of the peace for Dorset in 1910 and three years later was appointed a member of the advisory committee for the appointment of magistrates in the county.

Medical News.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE: *Course in Physiology Applied to Hygiene.*—With the concurrence of the King's College Delegacy, Prof. R. J. S. McDowall will deliver at the School a course of lectures, commencing May 7th, in physiology applied to hygiene. The course is primarily intended for students preparing for the diploma in public health, and the lectures are being given in pursuance of the policy of the Board of Management of supplementing, where necessary, the facilities for teaching for the D.P.H. available at other institutions, pending the development of the full scheme of teaching when the new school is ready. In these lectures will be given the more modern aspects of those parts of physiology which form the basis of public health work and which are not yet easily available in book form. The syllabus of lectures is as follows:

1. *General.*—The body as a physical and mental machine, its relation to environment. The principles involved in promoting efficient longevity in a certain sphere.
2. *Physical Work.*—The response of the body to physical exercise. Its relation to health and to artificial exercises. The influence of use and disuse. Physical standards.
3. *Mental Work and Associated Phenomena.*—The nervous system and the general principles of its function. Habit formation, some aspects of psychology. The influence of use and disuse.
4. *Fatigue and Overstrain.*—Muscular fatigue, mental fatigue. Recovery. The importance of sleep, variety, interest, and alternation.
5. *Industrial Fatigue.*—Applications of the foregoing. The sense of well-being. Vocational tests, their principles, practice, results.
6. *Digestion.*—General principles, with special reference to the prevention of common ailments—e.g. indigestion, constipation, &c. The relationship of physical and mental states.
7. *Metabolism and Growth: General Principles of Metabolism.*—Diet, endocrines, vitamins in their relation to growth. Basal metabolism.
8. *Body Temperature and Water Content.*—Their maintenance and relation to environment.
9. *Effect of Open-Air and Sunlight.*—Relation to vitamins.
10. *Principles of Respiration, with Special Reference to the Effect of Noxious Gases and Abnormal Pressures.*
11. *Normal Protection of the Body against Disease.*—Skin, lymphatic tissue, digestion, excretion, immunity in their more physiological aspects. Their relation to water-supply, exposure to cold, &c.
12. *The Child.*—General care, speech, intelligence tests, evidence of deficiency.

For the present no fee will be charged to D.P.H. students. Inquiries should be addressed to the Secretary of the School.

ROYAL SANITARY INSTITUTE.—A sessional meeting will be held in the Guildhall, Hull, on April 23rd and 24th, when there will be discussions on Housing, on the Public Health Functions of Bodies other than the Sanitary Authority (Dr. W. Allen Daley and Dr. J. J. Buchan), the Economic Collection of Town Refuse, and the Present Position with regard to Smoke Prevention.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION.—Mr. Herbert J. Paterson will give a demonstration in clinical surgery at the London Temperance Hospital on Thursday, April 22nd, at 2 P.M., which will be free to members and General Course ticket-holders of the Fellowship of Medicine. The Bolingbroke Hospital will hold a short course in medicine and surgery from April 19th to May 1st, the fee for which will be one guinea. Also beginning on April 19th there will be an intensive one week's course in proctology at St. Mark's Hospital and a two weeks' course in urology at St. Peter's Hospital, consisting of clinical work in the hospital daily and formal lectures. From May 3rd to 22nd a special course in medicine, surgery, and gynæcology will be held at the Royal Waterloo Hospital. The Central London Throat, Nose and Ear Hospital will hold an intensive course in laryngology, rhinology, and otology from May 3rd to 22nd. This will be divided into clinical and operative parts; the parts may be taken separately if desired. The Royal Westminster Ophthalmic Hospital is holding an afternoon course from May 3rd to 22nd, with clinical work each afternoon and special demonstrations thrice weekly. A comprehensive course in Venereal Diseases will be given at the London Lock Hospital from May 3rd to 29th. The clinical part of the course will be held irrespective of numbers, but the formal lectures will only be delivered if there are eight or more entrants. At the Maudsley Hospital there will be a course of lectures and demonstrations in Psychological Medicine from May 3rd to 28th; this is an abridgement of the diploma course now in progress there. From May 9th to 22nd the Infants Hospital will give a course under the direction of Dr. Eric Pritchard. Copies of all syllabuses, of the General Course programme, and of the *Post-Graduate Medical Journal* may be had on application to the Secretary of the Fellowship at 1, Wimpole-street, London, W. 1.

UNIVERSITY OF LONDON.—A course of four lectures on the Integration of the Circulation will be given by Prof. R. J. S. McDowall at King's College, on Tuesdays, April 27th, May 4th, 11th, and 18th, at 4.30 P.M.; Prof. Kay Jamieson will lecture at King's College on the Nature and Functions of the Fasciæ of the Human Body on Fridays, April 30th, May 7th and 14th, at 5.30 P.M., and Prof. J. B. Collingwood will give the remaining lectures of the course on the Influence of Water on Vital Processes at University College on Mondays, April 26th, May 3rd, 10th, 17th, 24th, and 31st, at 5.30 P.M.

ROYAL MEDICAL BENEVOLENT FUND.—The date of the annual meeting will be Tuesday, April 20th, and not April 22nd as was previously announced. The meeting will be held at 11, Chandos-street, London, W., at 5 P.M.

THE LATE DR. W. K. LAW.—Dr. William Kidston Law, brother of the late Mr. Bonar Law, has died at his home at Coleraine, Co. Londonderry, at the age of 73. He was born in New Brunswick, the son of a Presbyterian minister, and studied at McGill College, Montreal, where he graduated as M.D., C.M. in 1877. He crossed the Atlantic as a young man and settled in practice at Coleraine, after taking the Scottish conjoint qualification; in 1884 he became F.R.F.P.S. Glasg. Dr. Law was well known as a breeder of Irish horses and was a large stockowner. His only son, Mr. James Law, has lived in Canada for the last 20 years.

INSTITUTE OF JOURNALISTS.—A meeting of the Circle of Scientific, Technical, and Trade Journalists will be held in the Hall of the Institute on Monday, April 19th, at 5 P.M., when Mr. J. G. Pearce (chairman of the Committee of the Association for Special Libraries and Information Bureaus) will open a discussion on a Clearing House for Information; its Value to Science and Industry, and its Relation to the Press. Those intending to be present should inform Mr. L. Gaster, 32, Victoria-street, London, S.W. 1.

PLAGUE IN INDIA.—The Bulletin of Health for the City of Bombay for February, 1926, records nine deaths from plague registered in February and two in January, the average number of deaths in February during the last ten years being 61. Calcutta was needlessly alarmed by the Weekly Bulletin of Vital Statistics issued for the week ending March 6th, 1926, which stated that "there were 20 deaths from plague against nil and nil in the two preceding weeks, the average of the past quinquennium being nil." We understand from Dr. H. M. Crake, health officer to the Calcutta Corporation, that 20 was a misprint for NO, and, in fact, that Calcutta has been absolutely free from plague since Dec. 7th, 1925.

ST. MARY'S HOSPITAL.—The Institute of Pathology and Research at St. Mary's Hospital, London, W., is holding a course of lectures on Pathological Research in its Relation to Medicine, which will be held in the Bacteriological Department on Thursday afternoons at 5 P.M., beginning on April 29th, when Sir Almroth Wright will speak on the General Outcome of Thirty-six Years' Work on Immunisation. The other lecturers will be Prof. Joseph Barcroft, Dr. Leonard Colebrook, Prof. J. Mellanby, Prof. David Wilkie, Dr. Charles S. Myers, Dr. John Freeman, and Mr. J. E. Barnard. The lectures will be open without fee to members of the medical profession and students of medicine.

THE LATE DR. J. JARVIS.—Dr. John Jarvis, who died on March 27th at the age of 66, had practised in Bath for 33 years. He studied medicine at St. Thomas's Hospital, London, and qualified as M.R.C.S. Eng., L.R.C.P. Lond., in 1885. For some time he worked at Liverpool as surgeon to the Liverpool Dispensary, and at Abingdon as surgeon to the Lying-in Charity. Dr. Jarvis first went to Bath as partner to the late Dr. John Davies and was later for a time in partnership with Dr. F. C. Fosbery. He had a large panel practice and for some 30 years was surgeon to the Western Dispensary. He was also honorary surgeon to the Church Army Labour Home. He married the sister of Dr. Fosbery and leaves one son and two daughters.

LONDON COUNTY COUNCIL: APPOINTMENT OF A FIFTH SENIOR MEDICAL OFFICER.—At a meeting of the Council held on Feb. 9th last it was decided to increase by one the number of positions of senior medical officer in the public health department, and 67 applications for the new position were received after it had been advertised. The selected officer is Dr. Aubrey Middleton Hewat, at present medical officer of health and administrative tuberculosis officer for the Metropolitan Borough of Fulham, which has released him to take up his appointment in a month's time, remaining honorary consulting medical officer to Fulham for two months after the date of his leaving office there. Dr. Hewat is an Edinburgh graduate who was medical officer of health for Nuneaton and Preston before being appointed to Fulham.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

FACTORY MEDICAL SERVICE.

To the debate on the motion for the second reading of the Labour Party Factories Bill in the House of Commons on March 26th, as yet unreported in these columns, important contributions were made by medical Members of the House.

The Home Office Staff.

Dr. VERNON DAVIES said that factory legislation being concerned principally with the health of the people and the prevention of accidents, it seemed to him that one of the most important servants of the State to carry out this legislation should be the factory surgeon. He had a knowledge of medical matters, of industrial hygiene, and of accidents. He regarded the medical man, the certified surgeon, as the sheet anchor and the most important man in factory legislation because he had to decide what was best for the worker. Yet they found that the Home Office—he said this with due respect—which exercised a very great amount of control over factory legislation did so without giving the fullest attention to the medical aspect of the case. They knew that the Home Office had an extremely able medical staff of eminent men who were at the head of the profession, but they wondered sometimes whether the Home Secretary paid as much attention to the recommendations of his medical staff as he should do. It had been said that some certified surgeons had been incompetent and neglected their work. He would draw attention to the fact that the present Chief Medical Inspector, who was an eminent man, spent the greater part of his official life until the war in attending to industrial diseases and poisoning. It was only just before the war that he devoted his attention to examinations for fitness. Since that time the work of the examination of children had improved tremendously in quality and had kept on improving. Provided that the certified surgeon got proper encouragement and proper opportunities for inspections he had no fear that the factory medical service would not reach a high standard of efficiency. But in this Bill the certified surgeon was put into an absolutely new category. Instead of being made centrally from headquarters the appointment was proposed to be made locally. Instead of having one certified surgeon they might have six or seven surgeons doing factory work, either at the instance of the Home Secretary or the local authority.

The argument had been used that it was better that the factory health service should be linked up with the local medical service. He disputed that statement. They all knew that at the present time the position of a medical officer of health was largely a local appointment made with the Ministerial sanction, but it was well known that they might have two urban district councils close together where the appointments were practically made locally without great regard for efficiency, and that in one urban district council area they found a medical officer who was keen at his work, while in the next district council area they found a condition of things which was just the reverse. That was a very great objection to local appointments. On the other hand, they found that for many years the certified surgeon had been regarded as a Government officer both by the employers and the workpeople. He had gone to the factory with a certain amount of independence not subject to local influences, and the mill authorities had paid much more attention to his decisions than they would have done had he been appointed locally with the possibility of being dismissed through local intrigue and influence. They had to recognise that certain suggested improvements in factory legislation did not always meet with the approval of the employers. If they thought that a man was going to be too officious and too anxious to bring conditions up to a high standard they might be able to bring pressure to bear and perhaps in extreme cases get rid of that man. That would not be wise, and he believed that this alteration had been put into the new Bill—namely, the substitution of appointed doctors for certifying surgeons—probably because of the report of the Committee on the Medical Examination of Young Persons in Factory Employment instituted by Mr. A. Henderson. On that committee there was no medical man of actual experience in factory work. When Mr. Henderson was asked to include such a member he replied to the Association of Certifying Surgeons that the committee had already been formed after careful consideration and that such a gentleman could not be added to the committee. Only one doctor of practical experience in this work had been called before the committee to give evidence, and the doctors thought that the committee had not that full knowledge of the case for the certifying surgeons which the circumstances warranted, and that if medical men accustomed to factory

work had been on the committee the report would have been different.

There was a danger that there would be no agreement between the different districts and uniformity would be impossible. The importance of this point to the workers was very great, because if they were to have an efficient factory service worked on definite lines they should have a sufficiency of medical inspectors—there were only two at present—to go all round the country to see that the certifying surgeons were all working on the same lines and to the same standard of efficiency. In that way they would get an admirable service with such wonderful effects on the workers and on industry that it would more than repay itself. He hoped that the Home Secretary in his promised Bill would give careful consideration to this question of the certifying factory surgeons and as to whether the present system was best. No doubt there were some men who did not take their work as seriously as they should, but there had always been a large number of conscientious and able certifying surgeons. It was essential for the good of industry and of the worker that this factory service should be worked from above and by Government officials under the Home Office and that standardisation throughout the country should be insisted upon. Medical men then would take an interest in what they had to do, to the benefit of all concerned.

The Certifying Surgeon.

Dr. WATTS said while he agreed that reform of the factory law was necessary he joined with Dr. Vernon Davies in taking exception to the attack made upon the Association of Certifying Factory Surgeons. As an ex-President of that Association and as one who for 25 years was a certifying surgeon in the industrial district of Manchester, he claimed to have a long knowledge of the work of certifying surgeons, and though they had been hampered and discouraged by the department time after time yet for a great number of years their work had been steadily improving. He would mention particularly those surgeons with districts of any size. There were roughly 1800 certifying surgeons in the country, but only 250 had a district that entailed the examination of more than 50 or 60 children per annum. With the work of the 1500 or more who had a small district he was not acquainted, but as to the work of the 250 members of the Association of Factory Surgeons he could speak with confidence of the excellent official work they had done, while in addition they had instituted many reforms and health improvements in the industrial system. For example, there was their work in connexion with the prevention of lead poisoning and carbon bi-sulphide poisoning and other industrial diseases which were now practically dying out. He had been interested for many years in a matter which was a great danger in the cotton industry—namely, the threading of shuttles by suction. A departmental committee was appointed, but nothing had been done. He had seen very definite instances of people who had contracted tuberculosis in this way. He urged that in the forthcoming Bill which the Home Secretary had promised to introduce this session they should have a unification of the factory medical service. This had already been recognised by Belgium, Holland, and Sweden. In each of those countries there was at present a complete factory medical service which was founded largely on the recommendations of the Association of Factory Surgeons in this country. He believed that they could get together in Great Britain the finest factory medical service in the world. There was an important point he wished to refer to, and that was in regard to the duties which the certifying factory surgeon had to perform in connexion with the Workmen's Compensation Acts. In the case of a workman suffering from one of the scheduled diseases, such as lead poisoning, it was first necessary for the person who was suffering to get a certificate from the certifying surgeon prior to any compensation claim. If the certifying surgeon was appointed by the local council what was going to be his position having regard to the fact that in many cases the employer might be a member of that local body? The workman, too, might be a member of it. Up to now the certifying surgeon had been an independent official, and the point was one which ought not to be lost sight of.

Unification of Health Service.

Lieut.-Colonel FREMANTLE said that everybody would recognise that from the point of view of medical officers of health and inspectors a Bill of this kind should be passed into law as soon as possible. There were, however, very serious reasons from the point of view of those who envisaged public health as a whole why the House should not accept this Bill as it stood at present. They would not get the things set right of which they had heard in that debate unless they had continuous supervision. The certifying factory surgeon would have to certify, and was not there to watch the processes and see where medical science could help. They needed an authority at the head who was constantly there to help. At present it was left to the non-medical inspectors. They had to consider this matter a good deal more clearly than they had done at present to see in what way they could get some unity of effort between all the different conflicting medical officers and sanitary authorities and education authorities who were brought into this Bill in order that there might be a combination of effort to improve the health of the country and health in our factories. He did not suggest that the whole of the health side of the Home Office should be transferred to the Ministry of Health; that was a big question and he did not agree with it, but he did say that if the Ministry of Health was to be worthy of its name it must be in active and direct liaison with the carrying out of the Factories and Workshops Acts.

HOUSE OF COMMONS.

TUESDAY, APRIL 13TH.

THE ECONOMY BILL.

The House reassembled after the Easter recess on April 13th, and went into Committee on the financial resolutions connected with the Economy Bill. Mr. J. F. HOPE was in the chair.

Health Insurance in the Services.

Sir L. WORTHINGTON-EVANS (Secretary of State for War) moved a financial resolution which in conjunction with another resolution empowered the Government to take £1,100,000 from the Navy, Army, and Air Force Insurance Fund. He said that the only effect would be to enable members of the fund to obtain benefits in addition to those provided by the Insurance Act and to call on the State to contribute one-seventh of the cost of those additional benefits. Under the existing provisions of the Insurance Act serving soldiers, sailors, and airmen paid nothing so long as they were in the forces, but the War Office made a contribution to the Insurance Fund which enabled the Service men to receive only maternity benefit while serving. A separate Army, Navy, and Air Force Insurance Fund had been set up for the benefit of the men whose health had been impaired through their service and whom no society would accept as members. Members of this fund were only entitled to standard benefits and not to any additional benefits. The alteration now proposed would give members of the fund the right to receive additional benefits equal, on the average, to the average benefits payable by the approved societies. The Government Actuary's report stated that there was a surplus, on Dec. 31st last, of £1,424,000 on the Army, Navy, and Air Force Insurance Fund, after providing for ordinary benefits. It was now proposed to transfer £1,100,000 of the surplus and to leave the balance in the fund. The Actuary advised that that amount would be sufficient to enable the fund to bear the additional benefits. This part of the Economy Bill would undoubtedly give greater benefits to the serving soldiers, sailors, and airmen than before. This money was not a surplus available for additional benefits, and if it was not transferred under the Bill it would be used to lower the Government's contribution and the men would not receive it. The Government were taking every precaution that the fund should be solvent on their Actuary's advice.

After a prolonged discussion in which Mr. R. J. DAVIES and Sir JOHN SIMON took part, and Mr. LLOYD GEORGE said that there was no distinction between the Government's proposals and the raiding of a bank or a public company, the resolutions were agreed to.

Cost of Medical Benefit.

Clause 2 of the Economy (Miscellaneous Provisions) Bill provides that:—

(1) Subject to the provisions of Section 83 of the principal Act there may out of the benefit funds payable under that Act be applied for the purpose of meeting the cost of medical benefit, the administration expenses of insurance committees, and any expenses incurred by the Minister in connexion with the administration of benefits, a sum at such yearly rate as may be prescribed, not exceeding 13s. per year in respect of each of the total number (calculated in the prescribed manner) of the persons who are entitled to medical benefit as being or having been members of an approved society, and there shall be paid for each year to insurance committees on account of the cost of medical benefit and their administration expenses, and to the Minister on account of expenses incurred by him in the administration of benefits, sums not exceeding in the aggregate the sum applicable as aforesaid, and not exceeding as respects the administration expenses of insurance committees the sum of sixpence, and as respects the expenses of the Minister the sum of threepence, in respect of each of the total number aforesaid; provided that if the aggregate sum paid for any year to insurance committees and the Minister under this section in respect of each of the total number aforesaid is less than the sum applicable as aforesaid in respect of each of the total number, the balance shall be carried forward and be treated as being applicable as aforesaid in any subsequent year.

(2) For the purpose of meeting any additional expenditure which may be incurred in the provision of medical benefit in Wales by reason of sparsity of population or difficulty of means of communication, provision may be made by regulations for the payment out of the National Health Insurance Fund to the Welsh National Health Insurance Fund of such sum as may be prescribed.

(3 This section in its application to Scotland shall have effect subject to the following modifications: (*a*) In addition to the payments to be made under Subsection (1) of this section out of the sum applicable as provided by that subsection, there may be paid thereout any expenses of the Scottish Board of Health in connexion with the provision of a medical service for insured persons in such districts of Scotland (other than the Highlands and Islands within the meaning of the Highlands and Islands (Medical Service) Grant Act, 1913) as may be determined by the Board to be necessitous, and references in the said Subsection (1) as applied to Scotland to expenses incurred by the Board shall be construed as including the expenses aforesaid; and (*b*) the maximum sums as respects the administration expenses of insurance committees and the expenses of the Board shall be such sums as may respectively be prescribed.

(4) This section shall come into operation on Jan. 1st, 1927.

An Amendment.

Mr. R. J. DAVIES moved an amendment to omit the provision that any expenses incurred by the Minister of Health in connexion with medical benefit should fall on the approved societies. He said that the purpose of the amendment was to challenge the power of the Minister in this matter. The Minister made agreements on behalf of the insured population with general practitioners acting as panel doctors, and the Opposition were not quite satisfied that the right hon. gentleman had so far made, or would in future make, the best bargain possible with the doctors in favour of the insured persons. There was a great deal of criticism, not of the attitude of the Minister of Health, but of the actions of the medical profession in giving treatment to insured persons. For his own part, on the whole, he thought that the panel doctors had done their work admirably under the State insurance scheme. He believed, however, that the doctors had been paid handsomely for their work and that the Minister had not been at all stingy with them. The Minister should pay more attention to the opinions of the approved societies and his power to veto their proposals should be taken away. The cost of administration ought to fall on the Exchequer.

Sir KINGSLEY WOOD (Parliamentary Secretary to the Ministry of Health) said that the provisions of Clause 2 of the Bill were designed to carry out the recommendations of the Royal Commission on National Insurance. The Commission came unanimously to the conclusion that medical benefit should be paid for out of the funds of the approved societies. The whole of the clause had received the support of the Consultative Council.

Mr. R. J. DAVIES asked whether the support of the Consultative Council in regard to Clause 2 of the Bill was not contingent on the omission of Clause 1.

Sir KINGSLEY WOOD said that that was not so. The Treasury would save, by the proposal, 3*d.* per member per year in respect of the cost of regional medical officers and of the Central Index Register.

The amendment was rejected by 208 votes to 140—Government majority 68.

Registration of Optical Practitioners.

Mr. KELLY asked the Minister of Health what action he proposed to take to meet the views expressed by the recent deputation from the joint council of qualified opticians with regard to the practice of sight-testing; and what was the attitude of the Government with regard to the proposed Bill for the registration of optical practitioners.—Sir K. WOOD replied: For reasons explained to the deputation referred to by the hon. Member my right hon. friend does not propose to take any action in the matter and the Government are not prepared to grant any facilities for the passage of the Bill.

Accidents Due to Splintered Glass.

Colonel DAY asked the Minister of Transport whether he was aware of the number of accidents lately to public service vehicles in which passengers had been injured by splintered glass; and would he consider the advisability of enforcing the fitting of non-splinterable glass in all passenger-carrying vehicles in the future.—Colonel W. ASHLEY replied: With regard to the first part of the hon. and gallant's Member's question, I have no information. With regard to the second part, I am anxious to encourage the use of some form of unsplinterable glass on public service vehicles, but I am advised that, for reasons of cost, it would not, for the present, be practicable to make its use compulsory.

Medical Diary.

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES.

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
TUESDAY, April 20th.—5.30 P.M., General Meeting of Fellows. Ballot for election to the Fellowship.
THURSDAY.—8.30 P.M., UROLOGY. Clinical and Pathological Meeting.
FRIDAY.—4.30 P.M., STUDY OF DISEASE IN CHILDREN. Clinical Meeting at the Hospital for Sick Children, Great Ormond-street, W.C. 8 P.M., EPIDEMIOLOGY AND STATE MEDICINE. Sir Leonard Rogers: The Climatic and Other Factors Influencing the Spread of Cholera in India.

THE MEDICO-LEGAL SOCIETY, 11, Chandos-street, W.
TUESDAY, April 20th.—8.30 P.M., Mr. C. Ainsworth Mitchell: Some Aspects of the New Regulations on Preservatives, followed by a discussion.

CHELSEA CLINICAL SOCIETY.
TUESDAY, April 20th.—8.30 P.M. (in the Board Room of St. George's Hospital), discussion on the Treatment of Late Syphilis. Speakers: Prof. J. Eyre and Dr. C. E. Sundell.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, April 19th, to SATURDAY, April 24th.—Special afternoon demonstration in clinical surgery on Thursday at 2 P.M. by Mr. W. E. Tanner at the Prince of Wales's General Hospital, Tottenham. Open to all members of the Fellowship and to General Course ticket-holders.—ROYAL FREE HOSPITAL, Gray's Inn-road, W.C. Wednesday, 5.15 P.M., Dr. Heald: Demonstration on the Diathermy Current—its Uses and Application (part of special course).—ST. MARK'S HOSPITAL, City-road, E.C. Intensive course for one week.—ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, Great Portland-street, W. Intensive course (second week).—ST. PETER'S HOSPITAL, Henrietta-street, W.C. Clinical course every afternoon and formal lectures. Further information from the Secretary of the Fellowship of Medicine.

ANCOATS HOSPITAL POST-GRADUATE LECTURES, Quay-street.
THURSDAY, April 22nd.—4.15 P.M., Dr. Langley: Diabetes in General Practice.

MANCHESTER ROYAL INFIRMARY POST-GRADUATE COURSE.
TUESDAY, April 20th.—4.15 P.M., Mr. A. H. Burgess: Acute Intestinal Obstruction.
FRIDAY, April 23rd.—4.15 P.M., Dr. F. E. Tylecote: Demonstration of Medical Cases.

MANCHESTER AND SALFORD HOSPITAL FOR SKIN DISEASES POST-GRADUATE COURSE.
THURSDAY, April 22nd.—4.30 P.M., Dr. Dyson: Eczema.

Appointments.

BULMAN, J. R., M.B., Ch.B. Edin., has been appointed Medical Superintendent, Burgh Isolation Hospital, Hereford.

CAVE, E. H. P., M.B., B.S. Lond., L.R.C.P. Lond., M.R.C.S., D.M.R. & E. Camb., Medical Officer in Charge of X Ray Department, Royal Berkshire Hospital, Reading.

NISBET, B. R., M.B., Ch.B. Edin., Assistant Medical Officer and Assistant School Medical Officer, South Shields.

Vacancies.

For further information refer to the advertisement columns.

Belfast, Mater Infirmorum Hospital (Incorp.).—Hon. Asst. Gynæcologist.
Bethlem Hospital, Lambeth-road, S.E.—Res. H.P. £25 per quarter.
Birkenhead Education Committee.—Asst. M.O. £600.
Bradford Royal Infirmary.—H.S. and H.P. Each £150.
Bristol Royal Infirmary.—Hon. Asst. Surg.
Burton-on-Trent Infirmary.—Jun. Res. H.S. £150.
Carshalton, Surrey, Queen Mary's Hospital for Children.—Asst. Bacteriologist. £600.
Chester Royal Infirmary.—Third H.S. £150.
Coventry and Warwickshire Hospital, Coventry.—Res. H.S.'s. £150. Res. H.P. £125.
Eastbourne, Princess Alice Memorial Hospital.—Res. H.S. At rate of £175.
East London Hospital for Children.—H.P. and Cas. O. Each £125.

Foot-and-Mouth Disease Research Committee.—Two Research Assts. £500.
Gloucester County Mental Hospitals, Wotton and Barnwood.—Jun. Asst. M.O. £350.
Gordon Hospital, Vauxhall Bridge-road, S.W.—Res. H.S. £75.
Greenwich, Dreadnought Hospital.—Med. Supt. £300.
Leicestershire County Council.—Asst. Tuberculosis M.O. £600.
Liverpool, Alder Hey Children's Hospital, West Derby.—Res. Asst. M.O. £200.
Liverpool, Eye and Ear Infirmary, Myrtle-street.—Hon. Aural S.
London Hospital, E.—Asst. in Dept. of Dermatology and Syphilology.
Macclesfield General Infirmary.—Second H.S. £150.
Maudsley Hospital, Denmark Hill, S.E.—Research Fellowship in Psychiatry. £300.
Metropolitan Asylums Board, Colindale Hospital, Hendon, N.W. Jun. Asst. M.O. £500.
Metropolitan Asylums Board, Grove Park Hospital, Lee, S.E.—Sen. Asst. M.O. £650.
Newcastle-upon-Tyne, Royal Victoria Infirmary.—Surg. Reg. to Throat, Nose and Ear Dept. and Surg. Reg. to Ophthalmological Dept. £100.
Nottingham, Children's Hospital.—Res. H.S. At rate of £150.
Plymouth Borough.—Asst. Port M.O., &c. £750.
Preston and County of Lancaster Royal Infirmary.—Jun. H.S. £150.
Royal Free Hospital, Gray's Inn-road, W.C.—Gynæcologist.
Stockton and Thornaby Hospital, Stockton-on-Tees.—Jun. H.S. £200.
Surrey County Council, Kingston-on-Thames.—Asst. M.O. £600.
Walthamstow, Wanstead and Leyton Hospital, Orford-road, E.—Jun. H.S. At rate of £100.
Winchester, Royal Hampshire County Hospital.—H.P. At rate of £150.

Births, Marriages, and Deaths.

BIRTHS.

DUNCAN.—On April 6th, at Gay-street, Bath, the wife of W. H. Duncan, F.R.C.S., of a son.

GALBRAITH.—On April 6th, at Woodside-terrace, Glasgow, the wife of Walter Weir Galbraith, M.B., Ch.B., of a daughter.

PARRY.—On April 2nd, at Brynhyfryd, Pwllheli, to Dr. Joan, the wife of Dr. R. H. Parry—a daughter.

SCOTT.—On April 5th, at Bockum, Potter's Bar, the wife of Dr. J. M. Duncan Scott, of a daughter.

MARRIAGES.

ARTHUR—SADLER-PHILLIPS.—On April 7th, at St. Mary's Church, Wimbledon, David Arthur, M.D., C.M., D.P.H., to Mabel, widow of John Sadler-Phillips, late Vicar of St. Matthew's, Ealing Common.

BICKERTON—HAWDON.—On April 10th, at St. Cuthbert's Church, Ormesby, John Myles Bickerton, F.R.C.S. Eng., to Margaret Alsager, only daughter of Colonel and Mrs. Hawdon, of Nunthorpe, Yorkshire.

RAWSON—BROWN.—On April 8th, at St. Maxentius, Bradshaw, Lancashire, Lieutenant Selwyn G. C. Rawson, R.N. (retd.), to Doris Brown, M.B., Ch.B., D.P.H.

WHITEHEAD—BAKER.—On April 6th, 1926, at St. James' Episcopal Church, Aberdeen, by the Rev. Canon Bartlet, M.A., Rector, Gordon Whitehead, M.B., Ch.B., of Athol Villa, Dukinfield, and 6, St. Ann's Passage, Manchester, to Mary Gertrude (Mollie), younger daughter of J. W. Baker, Esq., J.P., and Mrs. Baker, of 14, Albert-street, Aberdeen.

DEATHS.

AXHAM.—On April 8th, at Kilmartin-avenue, Norbury, Frederick William Axham, L.R.C.P., aged 86.

MARTIN.—On April 5th, after three days' illness of pneumonia, at Oriel House, Abingdon, Paulin John Martin, M.R.C.S., L.R.C.P.

RAIKES.—At Midland, Ontario, Canada, on April 7th, Lieut.-Colonel Richard Raikes, O.B.E., M.D., aged 67.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

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Notes, Comments, and Abstracts.

SOME CURIOSITIES OF CLINICAL MEDICINE.

BY C. E. SHELLY, M.D. CAMB., M.R.C.P. LOND.

II.*

COINCIDENT DISEASES: THEIR MUTUAL EFFECTS. INFLUENZA AND VARICELLA.

IN those exceptional instances in which two separate and distinct infectious maladies are running their course in the same individual, some modification of one or other is not infrequently to be observed. The most striking cases in which I have noticed this have occurred in the coincident examples of varicella and influenza.

In a family of five daughters, the four elder ones successively developed influenza (then prevalent in the neighbourhood) at intervals of exactly 13 days. There appeared to be nothing in their habits or mode of life to account for this special period of incubation. They had studiously abstained from attending church or any form of social gathering from the time when the first case occurred. But, while I have noted cases of acute influenza which developed definite symptoms within a few hours after well-established exposure to a virulent case of the disease, I have also noted others in which the incubation period appeared to be precisely 13 days. All these four cases were of medium severity and pursued the usual course.

The fifth and youngest daughter was at a boarding school near London. On the day following that on which the last of her four elder sisters developed influenza she returned home owing to her school having broken up in consequence of a widely spread epidemic of chicken-pox. Thirteen days after reaching home she developed influenza. I saw her on the following morning, when my attention was called to the existence of an eruption of minute, slightly raised, macular spots, which were most numerous on the back, at the base of the neck, and especially between the shoulders; there were a few lower down on the back as far as the buttocks, and a still smaller number irregularly scattered about the face, the temples, and the scalp. Within 24 hours a few more appeared on the front and sides of the chest, the flanks, and the abdomen.

Viewed through a good reading-glass the eruption was strikingly like the eruption of chicken-pox in its earliest stage. It appeared on the morning of the 18th after the patient's last contact with a school-fellow whose chicken-pox eruption definitely developed the same evening. But, in this case, the modified eruption of varicella—as I took it to be—consisted of minute spots, not more than ¼ to 1 mm. in diameter, with the exception of one on the right temple, which was 2·5 mm. across when fully developed, corresponding to the popular "king-pock." All the spots went through the regular successive stages of macule, papule, vesicle, and mild pustulation—as viewed through a good magnifying glass—and then speedily dried up with a resultant minute scab barely recognisable as such; with the exception of the relatively large spot on the temple, which, on the separation of its scab, left a faintly foveated scar. The only discomfort of which the patient complained was of some slight and occasional irritation of the skin during the first two or three days of the eruption. Unlike her four elder sisters, this patient had not previously suffered from chicken-pox.

During the later autumn of the same year several similar cases came under observation in a preparatory school of some 50 boys whose ages varied from 9 to nearly 15 years. Epidemics of both varicella and influenza were running in the neighbourhood, and both maladies invaded the school. Anything like rigid isolation of the cases was impossible. Nineteen of the boys were said to have had had chicken-pox in earlier life, but the diagnosis was admittedly doubtful in the case of one of them, who developed chicken-pox but escaped influenza (from which he had suffered during the previous term). The other 18 developed influenza but did not have varicella. Of the other 30 boys all but three developed influenza, not of a severe type, and 12 of them developed chicken-pox also. In eight out of the 12 the two diseases were coincident, that is to say, they developed within two or three days of each other in the same individual; and in each of these eight "coincident" cases, the character and progress of the varicella eruption repeated in every essential particular the details already mentioned as having been noted in the case first described.

It would appear, therefore, that when influenza and chicken-pox occur simultaneously in the same individual, the normal eruption attending the latter malady is liable to be remarkably modified, in young adolescents at all events. Assuming that

* Part I. appeared in THE LANCET last week.

there may be some ancestral kinship between varicella and variola, one would like to know (1) what happens as regards the character of the eruption when variola and influenza occur coincidently; and (2) what effect (if any) would be produced in the small-pox patient by treating him with an influenza serum or vaccine at the beginning of his illness. If the result were no more than a cosmetic gain (and one might reasonably look for more than this) it would be a valuable one.

CHRONIC CO POISONING.

A young woman consulted me on account of neurasthenic symptoms from which she had been suffering through the colder periods of the previous 18 months, during which she had been employed as a typist in a factory situated in a small village amid country surroundings some miles distant. During the summer she recovered her usual good health; even in the colder weather she improved considerably during the week-ends, which were spent at her home, only a short distance from her place of work; but she began to "run down" as soon as she returned to her duties, and at the end of the week felt fit for nothing. Her hours of work were not unduly long. Her eyesight was good, and, save for a markedly anæmic condition, examinaton did not reveal any definite sign of bad health. Her family history was good.

In reply to my questions she stated that during the warmer parts of the year she did not suffer; windows were all kept open and there was no stuffiness. But as soon as a lower temperature called for artificial heat and windows and doors were kept closed the trouble began. The building was lofty, of one floor only, and was not crowded; it was constructed almost entirely of wood. It was heated by a number of iron stoves placed at intervals along one side, the chimney of each being carried up through the roof. Her desk was not far from one of these stoves, which sometimes became almost red hot. She did not appear to be in any way hysterical, and was anxious not to leave her post. She had noticed that the workers generally whose duties kept them on the opposite side of the building—away from the stoves—did not complain, although they did not seem so cheerful and talkative during the colder weather—when the stoves were burning—as at other times. Their employer was regarded as kind and considerate.

No examination of the blood was made, but the evidence seemed to point very clearly to a chronic poisoning by carbon monoxide produced by the passage of carbon dioxide gas through the red hot—or almost red hot—thin iron walls of the heating stoves. The patient was told that her symptoms were due to her propinquity to the particular kind of stove in use, and that I would write to her employer on the matter. This I did, stating my belief that, if the stoves now in use during the cold weather were replaced by a system of heating—as by hot-water piping, free from the serious risk to health involved by the method now in force—the necessary outlay would be more than repaid by the improved health and increased output of his employees. The reply to my letter was characteristic of the business thoroughness of my correspondent's American nationality. It told me that he had scrapped the present form of heating apparatus and had substituted for it hot-water pipes, flow and return, heated by a stove placed in a separate well-ventilated chamber which had no direct communication with the workroom. Three months later he wrote again to the effect that he was assured that he was receiving a handsome return on his outlay in the improved well-being and increased output of all his workpeople, to say nothing of a considerable reduction in the cost of fuel. The patient also informed me that she had lost all her previous discomfort since the new heating system had been installed. She certainly appeared to be in excellent health.

In the course of the same year I was consulted by a gentleman and his wife who occupied a large, modern, well-built house, in an open exposed situation in the country. Throughout the previous winter their general health and well-being—usually quite good—had steadily depreciated. Each morning they awoke feeling listless, depressed, and often with slight headache. These symptoms became less marked during the day, and by the evening they felt comparatively well. They were normally cheerful "open-air folk," but they now looked pallid, languid, and bereft of their usual energy. There appeared no very obvious cause for this change, and they denied having altered their usual habits and mode of life in any way—except that at the beginning of the cold weather an anthracite stove had been installed in their bedroom, and this had been kept burning ever since. They had still continued the custom of always sleeping with an open window. Further inquiry elicited the fact that the stove in question was constructed of ordinary cast-iron and was not enamelled. They were advised to replace it by a stove safeguarded by an external coating of good gas-proof enamel. This was done; the unpleasant symptoms disappeared, and the patients speedily recovered their good health. Three or four similar cases have come under my notice since, and I have heard of others. It seems probable that the mischief produced in this way may still be more common than one might have suspected.

Next in harmfulness to such carbon monoxide intoxication—although acting in quite a different way—is the too common expedient of heating a room by the use of a paraffin stove or lamp. This is often placed in the centre of the room, though occasionally on the hearth. But, unless placed actually within the chimney-throat, its effects are most pernicious, quickly robbing the air of a very large amount of oxygen, and at the same time fouling it with the products of combustion. Similarly, the condition of the air in the uppermost two or three feet of an ordinary room lighted by gas is intolerable—as will be obvious to anyone who mounts a pair of steps in order to rehang a picture under such conditions. It is seldom recognised how much of this vitiated air passes through the ordinary ceiling, which is merely a porous diaphragm, into the room above. If this be questioned, let the doubter pass a night in a bedroom so situated and compare his sensations during the night and on awaking the next morning with those which he experiences when sleeping in a bedroom situated above a room in which no gas has been burned during the evening.

THE PRESSOR-FACTOR IN HYPERPIESIS.

The interest aroused in connexion with arterial tension—its maintenance within normal limits; the origin and causation of the various abnormalities which are so often present; and in particular, the explanation of the production of hyperpiesis and of the several complications, local and general, which are apt to attend its existence—has recently occupied a considerable amount of space in the medical journals and in the proceedings of medical societies. In this connexion, the details of the case described below should have, I believe, a value of their own, presenting a demonstration of what one may regard as hyperpiesis in its simplest form; the production of high arterial tension maintained for some years at approximately the same level, unattended by toxæmic or other complications, or apparent interference with health, produced and sustained by a merely functional stimulation of the adrenal bodies, due to a simple and unsuspected cause. It thus presents itself as a direct and uncomplicated example of cause and effect, affording to us, as it were, something like a standard, whereby we may recognise and disentangle—perhaps even measure—the various accretions, symptomatic and pathological, which are apt to confuse and puzzle us.

A married man of middle age, who had taken a large house in the country for the later summer months, had spent the greater part of the previous three years or more in undergoing various "cures" at numerous health resorts on the Continent and in England. During this time he had lost flesh considerably, though he was now by no means emaciated. While he could scarcely be described as a hyperchondriac, he had become very self-centred as regards his health and his diet and concerned as to the real nature of his illness, as to which he had received, according to his own account, a variety of rather conflicting diagnoses. Apart from his mentality, his condition revealed only one abnormal symptom; he slept fairly and peacefully; his appetite was small (he had continued to practise a limited dietary and his present weight had remained unaltered); he took a fair amount of light exercise with ease and enjoyment; the bowels acted well and regularly; his urine was passed in sufficient amount and was in all respects normal. There was no indication of cardiac hypertrophy. But he had an arterial tension of about 195 to 198 mm. (systolic), with a fair range. His pulse was regular and full, but not hard, and the walls of his arteries were so soft that, when the vessel was emptied of blood, it was impossible to be absolutely certain that they were detectable by the finger.

I wrote to his medical adviser in Town, asking, among other things, whether this symptom was normal to the patient, and, if so, for how long it had been noted. In reply I was told that for at least three years the blood pressure had been from 196 to often a little above 200 mm. Towards the end of the letter it was mentioned that about three years previously an X ray examination had revealed the existence of a small "latent" stone in each kidney. None of the several surgeons who had been consulted ventured to advise interference under such conditions, and, for obvious reasons, the presence of these calculi had not been made known to the patient.

Here seemed to lie the most probable explanation of the hyperpiesis. The kidneys and the adrenals have the same vascular and nervous supply, and it seemed reasonable to suppose that, while the encapsuled stones might as yet produce no definite renal symptoms, their presence as foreign bodies might, nevertheless, evoke a certain amount of continuous irritation of the compressed nerve-endings in the kidneys sufficient to bring about an increased nervous and vascular stimulation of the adrenals, and thus to initiate the hyperpiesis. One also recalled the fact that, in certain cases—e.g., an acute scarlatinal nephritis—the application

of a large hot poultice to the lumbar region is followed by an appreciable softening of the previously hard pulse before any modification is noted in the amount or composition of the urine.

A large hot compress of Antiphlogistine was therefore ordered to be applied over the loins the same evening. When the patient was seen on the following afternoon the systolic blood pressure was found to be 136 mm. In other respects the patient's condition had undergone no alteration, except that he had slept rather better than usual during the previous night. During the ensuing four days the blood pressure gradually climbed up again to round about 196 mm.

The above clinical picture shows that increased activity of the adrenal bodies, if due to a simple non-toxic stimulation of their function, may continue for some three or four years at least without apparent effect on the patient's general health, and without producing any recognisable hypertrophy of the muscular walls of his arteries. It is not unlikely that if such adrenal stimulation were maintained for a prolonged period, some obvious thickening of the muscular coat would become perceptible: but this would be a natural and benign process—like the increase in the mass of his muscles during the training of an athlete. Moreover, in neither instance, should we expect any evidence of muscular degeneration so long as the exercise was continued, always provided that no toxic material were allowed to find its way into the circulation.

It is now generally admitted that, in a healthy individual, the regularly balanced action of the adrenals on the circulation is maintained by a correspondingly regulated action of the endocrine system. In the advanced—the down grade—period of life, the endocrine balance is apt to be distorted, often with a corresponding effect on the arterial tension; but even then it would appear that the arterial walls do not stiffen or degenerate if they be not subjected to some direct toxic influence brought to them by the blood they carry.

CASCARILLA: AN UNDERVALUED DRUG.

In this country cascarilla is sometimes employed as a mild expectorant in bronchial affections. In Germany it is used—because of its tannic acid content—as an astringent in diarrhœa, and is regarded, "like many allied drugs, as a discarded remedy for fevers."[1]

Several years ago I learned that the Romany boy learns to smoke without passing through that unpleasant phase of discomfort and distress which is usually a vivid experience in the case of his Gorgio contemporary. This relief is secured to the gipsy boy by mixing with his tobacco a small amount of a certain brown powder—procured, at a price, from the wise women of his tribe. Of course, its use has to be combined with certain mystic rites and incantations, but the further consideration of these may be omitted, since they do not appear to be essential to success in the case of the heretic. The powder in question proved to be merely roughly comminuted cascarilla bark. These facts suggested that cascarilla affects not merely the pulmonary branch of the vagus nerve, but also its cardiac and gastric branches, and further observations proved this to be the case.

I will quote only one instance. In a comparatively recent epidemic of influenza, which was characterised by the sudden onset of acute gastro-intestinal symptoms, continuous painful and violent vomiting, general exhaustion, diarrhœa, irregularity and intermittence of a feeble pulse, and a very prolonged and tedious convalescence, the administration of cascarilla in aqueous infusion was attended by most satisfactory results. The mixture prescribed contained potass. citrat. or sod. bicarb., gr. xv., sp. æth. nitros. ℥ x. to ℥ xv., with equal parts of liq. ammon. acet., infus. cascarillæ and aq. menth. pip. or aq. chloroformi (according to taste) to ℥i. Dose ℥ ss. to ℥ i. in water every two hours while awake, until the skin became decidedly moist, and then every three hours while awake. The only food allowed was water, hot and in frequent large doses, so long as vomiting continued; afterwards cold, with a small quantity of Bovril or of Oxo, for the first 24 hours. In only one of the 20 cases so treated was the vomiting so violent and exhausting that it had to be specifically checked by the administration of adrenalin (1 : 1000) ℥ vii. ss. in a wineglassful of water—a single dose of this proving sufficient. All were "quite comfortable," with normal pulse and temperature, by the end of 12 to 24 hours; at the end of the second day they expressed themselves as "quite well"—and seemed so—and gradual resumption of the ordinary diet was then begun, and they were allowed to get up after the seventh day. Convalescence in each case was speedy, uninterrupted, and complete. Other cases treated with the same mixture—except that the infus. cascarillæ was omitted—followed the prolonged and unsatisfactory course usual at the time.

In the case of patients convalescent from other debilitating conditions, who are still much "run down," without appetite, and often mentally depressed, a similar mixture, to which two or three minims of tr. nuc. vom. may be added, taken shortly before meals, often works wonders. It is, of course, important to make sure that a regular and sufficient action of the bowels is secured. It is equally serviceable when dealing with the various disabilities to which the heavy smoker is liable from time to time.

[1] Prof. E. Poulsson: "Text-book of Pharmacology and Therapeutics."

IMMEDIATE MEDICATION.

This term is here used to signify the introduction of the medicament into the site of trouble instead of administering it by the mouth—only the beginning of a much more roundabout route. Perhaps the simplest illustration is afforded by the treatment of "lumbago" by the method recommended by Dujardin Beaumetz, so long ago that it is now almost forgotten: the subcutaneous injection of a few drops of an aqueous solution of sodium salicylate (1 in 40) into the site of pain.

I had run into a little harbour on the East Coast in order to get a leaking butt-end set right by the ship's doctor. Coming out of the hotel after dinner I spied an old friend and colleague standing under the veranda of the adjoining house. He was staying for a fortnight's golf, it seemed. The next morning, after breakfast, I found him sitting in the same place—in a chair packed with cushions—looking very unhappy. He was in the throes of a crippling lumbago; he told me it had taken him two hours to dress and golf was impossible. I asked what he was doing for his relief. "Nothing," he answered, "nothing does me any good; it must wear itself out." I suggested his injecting half a grain of sod. salicyl. dissolved in 20 minims of water into each loin. "Half a grain!" he rejoined, "why, I take it in doses of 20 and 30 grains and it has no effect." "But, by the time your 30 grains have run the gauntlet of your stomach, and have found their way into the 30 ounces of your circulation, how much of them reaches the seat of trouble?" He had not considered that. "Well," I said, "it is worth trying, and at once; by this time to-morrow it will not be very effective probably," and I went off to my boat. That same evening I found him sitting in the same chair—but without any cushions—smoking a big cigar and looking very pleased with himself. I asked after the lumbago. "Oh, that's all gone," he replied. "I did not believe a bit of what you told me, but I sent to the chemist's for a syringe and an ounce of the solution. I injected 20 drops into my right loin and in ten minutes the pain on that side had disappeared. So I injected another 20 drops into the other side, sent off for a cab, drove up to the links, and won my match." I have known many cases equally successful. So far, I have never known the treatment to fail if used within 12 hours of the commencement of the attack; in about 50 per cent. of such cases it is equally efficacious at the end of 24 hours. It never fails to give a certain amount of relief.

The following case is, in some respects, more dramatic. In the early hours of a winter morning I saw the stillborn child of a healthy primipara. Labour had been normal and not unduly prolonged. The cord was long, looped quite loosely round the child's neck. Flicking with a towel, hot affusions, artificial respiration, and tongue-traction had been persevered with for nearly two hours vainly. The child's body was stone cold, white, and its eyes were glazed and insensitive. The case looked quite hopeless. But one remembered that the infantile heart has some lacertilian qualities; and there was just a glimmer of hope, that if only one could once set the heart going, it might continue to do so. Compression of the heart by the hand would mean a mutilating operation. I was minded to try a simpler measure first. There was no ether at hand, but a really good brandy was obtainable. The child was rolled up loosely in a hot blanket, and laid on its back on the table over the edge of which its head depended. A hypodermic syringeful of brandy was then injected vertically into the centre of the cardiac dullness to the left of the sternum. Tongue-traction was then resumed. At the third pull there was a slight gasp; this was repeated, more strongly at the fifth pull; and thereafter chest compression was gently used to reinforce expiration. In five minutes the skin had become pink and the child began to wail. The mother, who had fortunately been sleeping, then awoke. The child was dressed and given to her, and took the breast readily. It never looked back, and three years later I was shown his photograph—as bonny, plump, and well-developed a youngster as one could wish to see.

YEAR BOOK OF UNIVERSITIES OF THE EMPIRE.

THE 1926 edition of this useful year book has been edited, as before, by Mr. W. H. Dawson, and is published for the Universities Bureau of the British Empire by Messrs. G. Bell and Sons, price 7*s.* 6*d.* The year book, which was first published in 1914, has no light task to fulfil, for the calendars of the 67 British universities form in themselves a library of imposing dimensions, some 50,000 pages, and are

hardly accessible in their entirety anywhere than at the Bureau. The year book makes the attempt to extract from each of these bulky volumes such information as is likely to interest members of other universities and colleges, Government departments, school-masters, and the public generally. Medicine is largely represented in the year book, the section, for instance, which deals with the medical schools of the University of London (pp. 154 to 167) giving useful general information regarding the large teaching schools and the other institutions at which medical instruction is available in London. Appendix 26—which can be obtained in pamphlet form from the Bureau free of charge—supplies a list of professional schools, specialist studies and post-graduation courses, indicating to what extent each university undertakes work which is not common to all. Appendix 25 contains brief notes of the principal universities in the United States, those on foreign universities given in previous editions having been discontinued in view of the publication by the National Union of Scottish Students of a new Handbook on Foreign Study. The year book contains an index of names and an index of colleges and institutes, as well as a general index. It is conspicuous throughout for its accuracy and ease of reference. The address of the Universities Bureau is No. 50, Russell-square, London, W.C. 1.

INDUSTRIAL WELFARE WORK.

A RECENT publication by the firm of Reckitt and Sons, Ltd., describing the welfare work carried out in their factories and workshops, gives a good idea of how some of the general principles of industrial welfare may be applied to a specific industry. There can be few firms which have such a long and successful history of this kind of effort. The first lady welfare worker was appointed in 1906, and in the following year a works council was instituted. This was a far-sighted and wise move, and the development of welfare work on a coöperative and democratic basis has resulted in a fine organisation. This is mostly under the management of the employees themselves with the technical assistance of the welfare workers who now play an integral part in the firm's activities. In Hull the firm employs a full-time doctor, whose duty it is to look after the general health of the workers and to examine applicants for employment, and a full-time dentist examines the teeth of all applicants and gives the necessary dental treatment. A nurse is on duty during factory hours and a visitor goes to see any employees who are confined to their homes. The various clubs, educational institutions, and sports organisations also occupy a large part of the welfare workers' activities.

COUNTER-ATTRACTIONS FOR THE SAILOR.

A COMMITTEE of the United States Navy has been considering the prevention of venereal disease; the committee was exceptional, for there served on it no officer above the rank of commander—a committee, therefore, of junior officers only, and on that account, if for no other, memorable. Venereal diseases, they say, cause much loss of service, but how much is not accurately known. To make registration as complete as possible they recommend that no man shall lose pay or leave because of these diseases. As to their origin, it is observed that they are always contracted outside the service, and that the self-indulgence that makes them possible is learned not in the Navy but in childhood. Men naturally seek the society of women, and of good women if they are attainable. But it is less easy to become acquainted with these good women, so the committee recommends (*U.S. Naval Medical Bulletin*, December, 1925) that the Admiralty shall employ "at whatever salary necessary" a woman of agreeable and forceful personality, a trained social worker, to organise a corps of clever women willing to initiate social functions for the sailors in the ports and so to keep them out of mischief. If the Bureau of Navigation accepts the recommendation it will be interesting to see the results.

THE VENTILATION OF KITCHENS.

THE relation of the various methods of producing heat in dwelling-houses to health and disease is a subject on which laymen and, indeed, doctors often hold strong, if not prejudiced, views. The argument set forth by Dr. Vernor Sinclair in a small treatise[1] recently published is that carbonic acid, carbon monoxide, sulphurous acid, and ammonia arising from gas cooking stoves and closed combustion stoves are responsible for a number of illnesses including nasal catarrh, acid dyspepsia, rheumatoid arthritis, asthmatical conditions, diabetes, cancer, and various nervous states—e.g., neurasthenia. The evidence put forward in support of this argument is scanty and by no means convincing. There is at present no evidence, either statistical or experimental, that such gases, under ordinary conditions, ever accumulate in sufficient quantities to cause poisoning. Moreover, Dr. Sinclair admits that men are more frequently affected than women, although women spend far more of their time in proximity to such cookers and heaters. He gets over this difficulty by stating that man is less resistant to disease than women. In a foreword he states that plants in conservatories and greenhouses would die if gas and coke combustion products were allowed to enter these buildings; therefore, the heating apparatus is placed outside, and he argues that the same should hold for rooms for man. We know of some greenhouses where the heating apparatus is inside. It is possible to have sufficient air-flow to carry away combustion products if the heaters are inside hothouses, but the expense is greater. In ordinary rooms designed for human occupation, including kitchens, there is sufficient ventilation to carry away the products of combustion, so that there would appear to be no need to find other situations than those at present in use for cookers and heaters if the ventilation is efficiently controlled.

[1] Combustion and Atmosphere and Their Relation to Disease. By W. Vernor Sinclair, L.R.C.P., L.R.C.S. Edin. London: John Bale, Sons and Danielsson, Ltd. 1925. Pp. 47. 2s.

"OLD AGE MUST COME . . . ."

To the Editor of THE LANCET.

SIR,—I have read with much interest the note under this caption in your issue of Jan. 30th (p. 268) in which you state that "the idea of an extra ten years of enforced idleness after a busy and interesting life does not appeal to everyone," and imply that there may be some good fortune in being carried off by pneumonia in early old age.

The question you raise is an exceedingly important one in its bearing upon activities in public health and personal hygiene. The apathy or cynicism, if you please, of many people towards a programme for increasing the vitality and longevity of the race is a serious hindrance to the adoption of such measures as the periodic health examination and the acceptance of the counsel based upon the results of such an examination. Hence I am prompted to ask space for a presentation of the true thesis that underlies the movement for the extension of human life.

When the statement is made that ten years may be added to human life, it is natural for many people to picture individuals ranging from 65 to 75 years of age having ten years added to an existence that, on the average, is none too comfortable or satisfying. This, however, is not a true picture of the situation when ten years have been added to the average lifetime. In the United States about a dozen years have been added to the average lifetime in the past 37 years, but this certainly has not been accomplished by prolonging the lives of people over 60. It has been accomplished chiefly by a reduction in the death-rate under age 5. There has been little extension of life beyond the age of 50.

It is true that the present objective of the life extension campaign in this country is toward a reduction of the death-rate in later life, especially through the medium of periodic health examinations. The combined efforts of health workers in the various fields may be counted upon to reduce the death-rate at every age-period of life. And, most important, the reduction in the death-rate beyond age 50 and the carrying forward of the ultimate span of life to a much later period will be accomplished only through improving the vitality during the so-called active periods of life, and, in fact, materially prolonging that active period. It may be possible that the actual period of what we now picture as old age will be shortened.

In my judgment, the most pitiable aspect of the present situation of civilised man is the comparatively brief period of youth—what I have termed the health span—which actually persists, on the average, not more than ten years. This period of exuberant youth when the individual is in possession of the full ample reserves of power should be greatly extended. The work span—that is the period during which working men are regarded as so-called good risks—does not extend much beyond 45. The object of the life extension movement is to extend this period beyond 60. These are the constructive, attractive, and actual ends in view rather than adding a few feeble years to an already feeble existence.

As I have elsewhere expressed it, there is no purpose in the life extension movement to merely hang on to the coat-tails of Father Time, but rather to start as early in life as possible to equip the individual for a long and successful period of living, interpreting success as satisfaction in living in the highest sense of the term.

I may say, incidentally, that in the course of this work I meet a very large number of elderly people who are very eager to have their lives extended. The complacency with which men who have not yet felt the touch of old age state that they will be very glad to have their period of old age shortened, is rather rarely found among those who have actually reached that critical time. The will to live, or rather the desire to live, is a very widespread, in fact universal, characteristic of old age.

I am, Sir, yours faithfully,

EUGENE L. FISK, M.D.,
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